RICHMOND VALLEY COUNCIL

PRESSURE SEWERAGE CODE OF PRACTICE

October 2011

The Policy Documentation in relation to Pressure Sewerage Systems in Richmond Valley has been specifically created by Council, to provide a guide to the installation of this technology in the Richmond Valley Council Area.

The Code of Practice Document provides the details for or explanation of, the Pressure Sewerage Policy Document and has been drafted to minimise any confusion in relation to the pressure sewerage policy areas.

As pressure sewerage technology is still an evolving technology in Australia it is recommended that those with copies of this document ensure that their copy is current and as such they should not be more than two years old when used.

This code of practice was approved on ……October 2011…….

By……Manager Water Sewer Pools……

This Code of Practice is a companion document to the Pressure Sewerage Policy Document and collectively they supersede the Broadwater Protocol, which was formerly adopted by Council in 2007 to cover applications of pressure sewerage in Broadwater.

INTRODUCTION

This document is intended to provide the supporting detail associated with Council's policy on the use of pressure sewerage systems within its area of responsibility. Its role is to minimise any confusion in the adoption of that policy and the new technology.

Council's Pressure Sewerage Policy Document was created when it was recognised that previous Council policy developed for more traditional sewerage technologies would not always be applicable to pressure sewerage installations. The Policy Document was therefore targeted at filling those gap areas, between the different technologies.

In creating the new policy, it was similarly recognised that in the adoption of newer technologies, the actual implementation often requires much greater detail than is normally contained in a Policy Document. This Code of Practice is intended to address those detail aspects.

This document also links with the other pressure sewerage documentation available to the community, namely the following:

- The Pressure Sewerage Policy Document.
- The Council Pressure Sewerage Engineering Standards.
- A Home Owner's Manual to guide the Resident in the Use of the Pressure Sewerage Technology.
- A Pressure Sewerage Operations and Maintenance Manual.
- A specific Pressure Sewerage Customer Services Agreement.
- General information on what a pressure sewerage system is. Such publications being specifically compiled to inform potential land owners about pressure systems, where they have been used and what it will mean for the resident, if they purchase land that will be serviced by such a system.
- The Water Service Association of Australia's Code on Pressure Sewerage Systems (WSAA - 07).

In formulating its pressure sewerage policy, Council intends to maximise the unique advantages offered by the technology. It is also Council's clearly stated intention to install only those proprietary systems that have been specifically designed as a pressure sewerage system, to ensure the successful operation of this technology.

Modification to the Policy Document can only happen through Council approval. The Code of Practice is intended to be modified by Council's Executive and signed off by the General Manager as it deals only with the policy details and interpretation (clarification). It does not constitute a change in policy direction.

Table of Contents

1.0 THE USE OF PRESSURE SEWERAGE IN THE RICHMOND VALLEY COUNCIL AREA

Council has several differing sewerage technologies available to it, in achieving sewerage service provision to a particular location. The use of pressure sewerage technology is just one such option. Council's Policy will permit the wider use of pressure sewerage than just Broadwater, but only where it believes that this technology is appropriate. The conditions intended in Council's policy for its use are set out in more detail in the following sections. They represent the minimum justification that needs to be met before Council will approve the use of this technology.

However before contemplating any conditions for its use there is first a need to understand just what Council sees a pressure sewerage system as being.

1.1 What is a Pressure Sewerage System?

Council's Pressure Sewerage Policy defines a pressure sewerage system as a specialised central (or reticulated) sewerage system comprising the following elements:

- A dedicated pressure sewerage pumping unit installed on each property with the collective action of those pumping units being responsible for the pressure to move the sewage from the property, to the designated discharge point for the system.
- A property service line on each property that connects the pumping unit to the boundary valve arrangement.
- Boundary valves installed on each property to allow the property to be isolated for repair purposes and prevent backflow onto the property.
- A common collection system, designed specifically for a pressure sewerage system. It is to connect the individual properties to be served to the designated discharge point. Such systems follow minimum depth principals, rather than being laid on grade.
- A dedicated point for the discharging of all sewage collected in this manner, with this point to always be nominated by Council.
- Individual grinders (or cutters) and dedicated individual alarm systems to warn residents when their pumping unit is not working.

The property's sanitary plumbing collects /drains the sewage from the house /dwelling on the property into the pressure sewerage pumping unit by gravity. From this collection point, the pressure sewerage system becomes responsible to move the sewage to the designated discharge point.

The on property sanitary plumbing is not considered part of the pressure sewerage system rather it simply links to it and as such this plumbing remains the property of the property owner.

1.2 Existing Pump Ups

Council's pressure sewerage policy applies only to those systems described in section 1.1 of this document. An individual pump that currently pumps sewerage from an individual property to a Council gravity system is not classified as a pressure sewerage system, and is therefore not covered by Council's Pressure Sewerage Policy.

The conversion of the private pump ups to a pressure sewerage system is covered in section 11.2 of this document.

1.3 Council as the Determining Authority for any Sewerage Technology to be Adopted

Section 1 of Council's Pressure Sewerage Policy reminds proponents that Council remains the single determining authority on the nature of any sewerage system that will be adopted in the Richmond Valley Council Area. Council will after all ultimately be responsible for the operation and maintenance of that system, as well as the treatment of any sewage produced within that system. The nature of those systems therefore must be compatible with the technologies Council is set up to service and should also be compatible with any other technologies these systems may discharge into. At the bottom line the adoption of any new sewerage technology should not add unnecessary costs to the overall provision of sewerage services within the Council Area.

1.4 The Use of Pressure Sewerage in the Richmond Valley Council Area

Pressure Sewerage has been determined to be the preferred sewerage system to service Broadwater, but Council may permit the use of this technology in other parts of its area of responsibility where such a technology is determined to be the best solution. Pressure sewerage can typically be the preferred technology in applications where the site conditions of the area to be serviced:

- Are flat (and sufficiently large in overall size) such that more traditional technologies will require "system" pumping stations and deep mains to provide gravity based flows. Therefore, such systems incur considerable capital and operation costs.
- Demonstrate a high-water table adding not just to the construction costs but potentially may become the source of large volumes of infiltration entering the sewerage system.
- Demonstrate a considerable presence of rock, to a shallow depth or near surface levels.
- Have considerable volumes of sand in the overall reticulation area such that this sand is difficult to restrain for trenching purposes.
- Are likely to be such that the properties themselves will be large in nature, with considerable distance between them.

Pressure sewerage has some unique advantages which may be highly desired in some sewerage service provision applications and thus be the actual basis for electing

to use this sewerage technology over and above any financial considerations. For example, as a technology:

- It is a sealed system that generates negligible inflow and infiltration into the reticulation system. It is one of the few technologies to tackle inflow and infiltration generated on the property. *(Significant environmental and financial advantages are possible)*
- It can be totally installed by directional drilling. *(Site specific and environmental advantages)*.
- It has few if any main breaks due to ground movement or blockages due to tree root infiltration. *(Operating Costs and environmental advantages)*
- It does not allow flow back onto each individual property hence avoiding sewage overflows on these properties if there is a system blockage. *(Customer service, operational costs and environmental advantages)*.
- It permits the customer to still be able to use their systems, albeit in a limited capacity, after a problem has occurred. *(Customer service, operational costs and environmental advantages)*.
- It has no surface structures such as manholes where substances can be illegally discharged into. *(Operational costs and environmental advantages)*.
- It provides the resident with warning of potential problems with the sewerage system, in time to do something about the problem before it becomes a problem. *(Customer service, operational costs and environmental advantages).*

1.5 The Final Choice of the Sewerage Technology to be Adopted

Section 1.4 would appear to table several reasons why a proponent may want to adopt pressure sewerage, but this technology is not always the correct technology choice, for a sewage application. Thus, the choice of the best sewerage system for a application will be assessed on a case by case basis. Simply quoting the above perceived generic advantages will not be sufficient to sway the choice of technology in favour of pressure sewerage. Rather proponents of a pressure sewerage system will need in their application to demonstrate to Council:

- It represents the overall most economical solution to Council and the people of the Richmond Valley Council Area, over a 20-year period with detailed economic analysis to support this. This will be a detailed financial analysis included in any development application.
- There are <u>specific environmental reasons</u> that mandate its usage in a particular location. It needs for example to demonstrate why these environmental consequences are particularly applicable in this instance.
- There are <u>specific site requirements</u> that mandate its usage in a particular location clearly demonstrating these site requirements. These needs to be detailed and it needs to be explained why they have been adopted in that instance.

- That it is compatible with any existing sewage technology that may exist in a particular area and that it will not add to any maintenance problems for Council.

  If for example in an area is serviced by a conventional gravity system, the proponent of a pressure sewerage system for an extension to that system would need to demonstrate a strong case for moving away from the existing technology. Such a case would be based around the above criteria.

Council's acceptance or rejection of a pressure sewerage scheme in a particular area will be confirmed in response to any submission made to Council. The details set out above provide the basis of preparing such a submission with the specific weightings to be applied to each proposal to be determined on a case by case basis. A guide to prepare a detailed submission is set out in the Council Pressure Sewerage Engineering Standards, to assist proponents.

In preparing their submission the proponent will need to identify all of the costs to the Developer, Council and the property owners, not just any single party, for all of the sewerage options. This cost comparison must include all the operational costs for a 20-year period including allowances for the repair of the pumps and depreciation.

Any development proponent should also be talking with Council's technical officers well before the formal submission is made to ensure no effort is wasted in pursuing a technology that has limited opportunity of being successful in a particular area.

1.6 The Basis of Pressure Sewerage Design

The great majority of pressure sewerage applications in the Council area will be residential, wherein a single standard size pumping unit would be installed on the property and connected to the boundary kit using a standard sized discharge pipe. Non-residential applications are also permitted and these may (but not necessarily) involve larger pumping units than those for the residential connections and possibly even the use of multiple pump applications. These will need to be individually designed by those who have specialist knowledge of pressure sewerage systems and will require specialist provisions.

1.7 Discovery of a Pressure Sewerage System

Each property that is serviced with a pressure sewerage system will have the following marked (as appropriate) to record the property is serviced by a pressure sewerage system:

- The 149 Certificate
- The Section 88B Instrument

Council's Policy is that perspective land owners need to be able to discover that their intended property is serviced by a pressure sewerage system and then determine what that means before purchasing the property. Council will support this by having general information available on the pressure sewerage systems.

2.0 PRESSURE SEWERAGE TECHNOLOGIES TO BE SUPPORTED BY COUNCIL

There are several different pressure sewerage technologies in the market place, and adoption of each additional technology requires greater expenditure by Council in terms of the number of spare pumping units, the dedicated training for its maintenance personnel and the overall spares inventory that it must hold to operate and maintain any pressure sewerage system. As such Council Policy restricts the number of such technologies it will support to minimise its overall operational costs.

2.1 The Number of Technologies Supported by Council

Council's policy is that it will limit the number of pressure sewerage technologies it will support in the longer term to a single technology until 2015.

The initial choice of technologies will have been achieved through an open market approach. Such an approach will have allowed all the suitability aspects in terms of the performance of the different pressure sewerage technologies to be considered and a preferred technology adopted. The open tender approach should also have secured the best price that can be practically achieved for Council and the wider community.

The preferred technology as selected by Council is identified in Attachment 2 to this document, to assist proponents of pressure sewerage systems.

Ultimately however the number of technologies Council will support will depend on the ability to interchange pumps and the overall flexibility offered by the various technologies under consideration. It will also depend on the demonstrated performance of the technology it has originally chosen (down to the level of the individual pumping units). However, Council in expressing a preference to have just the one technology has in its policy clearly stressed that it will not be bound by that single technology if:

- The selected technology is discovered not to be up to the standards required of it by Council, in the applications it has been applied to. In these instances, Council may abandon this technology and move onto another technology, through another open tendering process.
- The successful tenderer amends their technology and Council is no longer happy to keep using this amended technology.
- The Tenderer tries to use this single technology preference to attain a monopoly advantage, and drive up the costs of the pumping units to Council.
- Other technology suppliers develop a product that is better suited to a particular application in the Richmond Valley Council Area. In these instances, Council may elect to use that product where and as required for those applications.

  The above may be especially true for non-residential applications where a newer product is identified as being more suitable to the non-standard applications.

- Better products in general come onto the market, changing Council's previous views of those technologies.

Any of the above issues may trigger a review of the policy in relation to the preferred technology before 2015.

2.2 Adoption of a Period Supply Contract

Council will in nearly all instances of pressure sewerage system installation in the Richmond Valley Council area be responsible to organise the supply and installation of the pumping units (refer Sections 10 to 13). Other components of this technology such as the boundary kits and flushing points will often be installed by others such as Developers. In rare instances, proponents may themselves need to install their own pressure sewerage system (including the pumping units) on a dedicated property, such as for a nursing home.

Council will assist other parties needing to install pressure sewerage components by ensuring it has long term supply contract (or other suitable) arrangements in place with the Technology Supplier. In this way, it will be able to make the pumping units (and other associated fittings) available to those parties wanting to use pressure sewerage in the Council area, at those contract prices.

Council will also need this contract to purchase ongoing spare pumps, training, spares and other products as appropriate. However, given the waiting times often involved with procuring the pumping units Council will thus have some spare units available from time to time. The intention in extending this access to the supply contract is for Council to assist where it can, in limited numbers, but it will not bound to supply units to other parties.

Nothing in this section should be interpreted as proponents (where they must provide different pressure sewerage technology components) as having to secure this technology from Council and they are encouraged to approach the Technology Supplier directly themselves.

3.0 THE COLLECTION SYSTEM

The collection system is defined as those common pipelines outside of the property that are generally laid in the road verge and downstream of the boundary kit, which is also considered part of the collection system. It also includes isolation valves, flushing points and air valves to allow it to function in an optimal manner. This system will be owned and operated exclusively by Council.

This system must be designed to meet several specific criteria as detailed in Council's Pressure Sewerage Engineering Standards, if it is to perform satisfactorily as a pressure sewerage system. Hence Council's Policy is to ensure that those designing this system not only understand what these design criteria are but that they also have the skills to design these systems.

Where the pressure sewerage system is to be constructed by Council, it will ensure that whoever it adopts to design the system will have these skills. Council will require that where such systems are to be installed by others that the proponents of those systems demonstrate that their designer (/s) has these skills.

The Policy also requires that the proponent submit any pressure sewerage system for Council scrutiny before the proposal will be approved. Any subsequent approval from Council should not be interpreted as Council having checked the design, but rather that Council has concluded that the proposal has met the general requirements for a pressure sewerage system. Furthermore, the Policy requires that the proponent remains responsible for the performance of the system and if it fails to achieve the levels of performance indicated in the proponent's submission then Council may initiate action to recover any rectification costs from the proponent.

Any proponent that installs a system that is significantly different to that which has been submitted to Council in the Development process can expect that Council is unlikely to accept handover, unless Council has been kept informed of the changes and have agreed to these changes. The changes also will require formal sign off from the system designer that the system will still meet designated performance targets.

It is normal in new developments (subdivisions) to install the collection system first with the connections to that system following as the area develops. The collection system will terminate at a boundary kit on each property to which the new residence will connect when they are effectively ready for occupancy. Similarly, if a pressure sewerage system were to be installed in an existing area then there may be several vacant lots (with a building entitlement) that will simply be serviced by the provision of a boundary kit.

Where these kits have been installed on a property, residential connection under Council's Pressure Sewerage Policy is automatically approved, when the dwelling has been constructed and essentially completed. For non-standard connections (as defined in the Engineering Standards) then formal approval to connect to the system will be required. This is so that Council can confirm that the application can be serviced by the downstream infrastructure. The exception to this would be in a designated area, where the collection system has already been specifically designed for those non-standard applications.

4.0 OWNERSHIP OF THE ON PROPERTY SYSTEM

The on-property system essentially comprises the following elements:

- The household sanitary plumbing
- The pumping unit
- The property service line.

The system effectively terminates at the connection to the boundary kit which is considered part of the collection system.

4.1 Council Owned Components

Council policy identifies that the ownership of the following "on property", assets will reside with Council after installation:

- Pumping Unit
- Storage vessel
- Ancillary fittings

- Property service line/s from the pump to the boundary kit
- Control/Alarm panel including the electrical connection from the panel to the pumping unit
- Boundary kit

The hydraulic termination point for Council ownership of the pressure sewerage system will be the first pipe joint on the inlet side, to the pressure sewerage storage vessel. Typically, the pumping unit is installed with a stub length of pipe protruding from it or it will have a specific connection point and it is to this pipe joint the property owners' plumber would normally connect to.

The point for electrical termination will be the alarm /control panel. The installation will include a connection to the dwelling's power board with a separate circuit to be used for the pumping units, so as not to interfere with the normal electrical operation of the house/ dwelling. This connection/separate circuit must be clearly and professionally labelled.

The lids of the pumping units are bolted down and the alarm/ control panels will be kept locked and interference will require a concerted and deliberate act. As such if there is any interference observed by Council maintenance personnel, the property residents will be readily identifiable as having caused this interference. Council's policy is that if it finds any evidence of resident /s trying to gain entry to the pumping unit, then Council may elect to lock the lids on these systems. It also has the power to fine the residents for this action and a decision on that will be made on a case by case basis.

Pressure sewerage systems do not have any resident serviceable parts, and under Section 635 of the Local Government Act it is an offence to willfully or negligently remove, damage, destroy or interfere with a sewer system. More importantly the pumping units themselves represent a confined spaces environment and therefore access to these needs to be restricted. If any part of the system is inadvertently left open, the resident is expected to notify Council so they can return and secure the system.

Property owners should note that the property service line is also defined as part of the system. Property owners/residents should locate the property service line before commencing any excavation works on the property, which may damage the line. Council may attempt to recover costs for any willful or negligent damage to the on-property pressure sewerage system.

4.2 Residential Owned Components

The property owner will be responsible for all sanitary plumbing upstream of the first pipe junction as per Section 4.1 including the overflow relief gully. They will be expected to call a private plumber if there is a problem and maintain these components in working order. The resident (if not the property owner) will be expected to inform them of this system malfunction.

The Property owner will be responsible for any repairs required in the dwelling's electrical system right up to but not including the control panel and they will call a private electrician to carry out these repairs. If it is determined that there are faults in

the pumping unit's installation or its ongoing operation that are causing difficulties with the properties power supply then Council will review these on a case by case basis.

In this manner, there is no confusion over who is responsible if there is a problem in the dwellings power board and repairs can be effected in the shortest possible timeframe.

4.3 Easements on the Property

In general Council's policy is that it will not seek to take out an easement over any part of the property to cover the installation of the pressure sewerage system. This is to leave the property owner the ability to subsequently relocate the "on the property components" (normally just the property service line, but possibly the pumping unit if feasible) later. However, any such relocation can only occur with Council permission, as the pumping unit and the pipeline are Council assets (as per section 4.1) and such a relocation of these components must occur in the manner designated by Council.

Such relocation may be required to accommodate future home extensions, property modifications etc. Not having a formal easement leaves Council and the householder the ability to capitalise on the flexibility offered by these systems. Refer Section 16 of this Code of Practice for any modification proposal.

Council does reserve the right to create an easement on a property, if it deems it is necessary to ensure the safe ongoing operation of the pressure sewerage system, the minimisation of any health concerns, or the protection of any Council property.

4.4 Pressure Sewerage on Public Property

In the case of pumping units on public property, all aspects of such systems are clearly the property of Council. In these specific instances the pumping unit lids will be either padlocked or have special holding down bolts that deny entry to third parties.

4.5 Variations in the Ownership of Pressure Sewerage Components

Council policy records that the exceptions to the above ownership requirements would typically be for non-residential applications, wherein the ownership of the on-property system will reside with the property owner. Typical examples include:

- The pressure sewerage system on a property is effectively a separate pressure sewerage system such as might be the case in a large industrial estate. It could also be an area controlled by a large body corporate or organisation such as a retirement village. As such that system would be privately owned by the governing body for that property.
- For those individual connections that do not fall within the definition of a standard pressure sewerage connection (as defined in the Council Pressure Sewerage Engineering Standards) that are not covered by the above.

These private pressure sewerage systems would discharge to a designated Council discharge point. If that receiving sewerage system was also a Council pressure

sewerage system then any internal pressure sewerage system would need to totally comply with the detailed requirements set out in the Council Engineering Standards for pressure sewerage systems before Council will approve such a connection.

5.0 OPERATION AND MAINTENANCE OF THE PRESSURE SEWERAGE SYSTEM

The operation and maintenance of the pressure sewerage system for nearly all applications will be carried out by Council and Council policy stresses the need for clarity in the roles to be played by all parties. This is despite the resident and property owners only having minimal roles in the operation of these systems. Council's Pressure Sewerage Policy stipulates that the maintenance arrangements as set out in the following sections will be followed in the operation and maintenance of all pressure sewerage systems in the Richmond Valley Council Area.

5.1 Operation and Maintenance of the Collection System

The total operation and maintenance of the collection system will be carried out by Council. External agencies are not under any circumstances to interfere with, operate any valves, or cut into the Council pressure sewerage collection mains. Council will not only refuse to accept handover of any assets where such interference has occurred but may act directly against the property owner or agency for interfering with Council property.

Residents are however asked to report any potential faults with this system and Council will attend to these "system faults". Where maintenance of this system interferes with the service to properties Council will endeavor to inform the property residents before the property is isolated for the maintenance activity to occur. The pumping units have been designed to accommodate this and one of the benefits of a pressure sewerage system is that it is still possible to operate the property's sewerage systems during such maintenance, albeit in a limited capacity, until the collection system is brought back on line.

Council will isolate the property at the boundary kit and the resident is asked to follow the alarm procedures laid out in their Home Owner's Manual, as the units may move into alarm mode.

5.2 Council Maintenance of the Residential 'On Property' System

In these instances, the pumping unit, the property service line and the pressure sewerage common collection mains will all be maintained by Council. The on-property maintenance will be in response to community /individual calls for assistance should any part of the system fail.

Council will in this role be responsible for:

- The perpetual maintenance, repair and eventual replacement of the pumping units and property service line on the property. This will be in response to resident call outs as no preventative maintenance is planned, unless specified by the technology supplier. This maintenance will

represent a significant change in operating practice for Council as it will now involve working on the customer's property.

- The collection systems into which the properties discharge including the boundary kits and the property service line.
- Supporting this maintenance with a 24 hour a day call centre, with the operators of that call centre trained to deal with pressure sewerage enquiries. This will be an extension of the current "after hours" arrangements with some specialised training for the operators.
- Holding sufficient spare pumps to allow for the maintenance of these units in acceptable time frames. The normal method of repair being to change the pump over and return the malfunctioning unit to the Council workshops, where it will be repaired and then added back into the pool of spare pumps.
- Holding all property drawings and then making copies of these available on request by the property owners.
- Providing the resident with a Home Owner's Manual and the contents of this manual are detailed elsewhere in this Code of Practice.
- Answering all general enquiries on this technology, including having available general information to the perspective land purchasers of new developments where they have been serviced with pressure sewerage systems.
- Informing the industry regulators as appropriate in relation to the performance of these systems.

The operation of these systems should effectively be automatic requiring little input from the property resident.

5.3 Council Maintenance of Non-Residential (Standard) Connections

For non –residential connections such as shops, retail outlets small offices, etc., these connections will normally be based upon the use of the same standard residential connection adopted by Council. In these instances, Council will also provide the same services as set out in Section 5.2 and the Customer Service Agreement covering these connections will essentially be identical to that for the residential connections. The only exception to this will be that Council will not be responsible to augment such connections to meet increased loads that will move them away from a standard connection.

5.4 Council Maintenance of Non-Residential (Non-Standard) Connections

Examples here could include schools, large clubs, industrial complexes retirement villages, even gated settlements that involve a significant internal pressure sewerage system which are the responsibility of the property owner, which may include a Body Corporate. For such non-standard applications, Council will only maintain the internal pressure sewerage system where that Property Owner / Body Corporate has entered into a specific Customer Service Agreement with Council. Where such an agreement has not been entered into, then the property owner will be solely responsible for the operation and maintenance of these systems.

5.5 Maintenance of Non-Residential (Non-Standard) Systems by Others

For non-residential applications where owners engage an external qualified body to carry out the maintenance of their pressure sewerage system, Council will require a copy of the maintenance arrangements be submitted to it, as part of the Development Application, along with copies to the NSW Health Department and the Department of Environment and Climate Change. This is to ensure that appropriate long term maintenance arrangements exist, before such a system can proceed. If these different regulators are not satisfied with the proposed maintenance procedures, then the proponent will need to revise their proposal.

It is also stressed that if a body corporate or private property owner were to seek to install a different technology to that which was maintained by Council then:

- Council would need to be convinced by the system designer that the addition of the new technology did not compromise the design of the common collection system operated by Council. If it was found to compromise this design, then connection would not be permitted until the property owners/ body corporate meets the costs to upgrade the collection system and those augmentation works had been carried out.
- Council would not by default take over the operation and maintenance of the internal pressure sewerage system, if the third party were to withdraw from this arrangement unexpectedly. The Body Corporate's emergency planning will need to accommodate this possibility and will need to demonstrate that it does achieve this arrangement to all the relevant Regulators at the time.

5.6 Council Levels of Service

In carrying out the maintenance of any Pressure Sewerage Scheme Council will endeavor to mirror the maintenance services provided for its more traditional sewerage services, particularly during business hours. Nevertheless, Council in moving to this technology also wants to capitalise on some of the specific advantages the technology offers.

Therefore, Council will specifically provide the following additional services after hour's service provisions:

- *Next day repairs or replacement of the pumps for after-hours responses to high level alarms, to minimise the inconvenience to residents*.

  In adopting this direction Council recognises that there is little value added to the resident in going onto the property in the evenings to carry out repairs for a normal residential application as there is considerable storage still left in the storage vessel to accommodate normal residential usage overnight with some precautions. The units are designed to accommodate reasonable periods of power loss. Both the resident and the costs of administering these schemes are best served by the repairs being carried out next morning when the repair crews can fully see what they are doing, and there is less chance of pets escaping.

- *As soon as possible response to any emergency with the potential for an overflow.*

  If the residents are entertaining a large number of persons or it is a commercial application where the system is still working or any other circumstance where there is the potential for an overflow to occur, these repairs need to be rectified in the shortest possible time. In these instances, "operational" judgement will be required with a preference for any erring to be on the side of caution.

5.7 Resident/Property Owner Operation

The primary requirements of Council is that the resident or property owner reports any faults with their system to Council immediately so that these systems can be maintained.

There are several minor requirements of the resident and property owner which will be set out in the Home Owner's Manual. This manual will be updated from time to time to reflect Council's evolvement of such systems.

This section overlaps with Section 7 of this Code of Practice, wherein the Resident and Property Owner roles are better defined.

6.0 POWER TO THE PUMPING UNIT

Council's policy is that the property resident will meet the power costs of the pumping unit's operation, as part of their normal residential power bill, and there will be no Council contribution towards these costs.

The pumping unit's power connection will not be metered separately, as this would only increase overall power costs, in the form of a separate meter reading, the sending out of bills with each reading and other general administration costs by the energy supplier. Industry experience indicates that these "reading" costs are higher than the costs of the actual power consumption from the pumping unit.

Any resident having genuine difficulty in paying their power bill should contact their energy supplier and indicate that their property is serviced by a pressure sewerage system.

7.0 REQUIREMENTS OF PROPERTY OWNERS AND RESIDENTS

The operation of the pressure sewerage unit is essentially automatic, and requires little on the part of the property resident, other than to exercise a little care and to notify Council if the pumping unit breaks down, or the discharge line breaks. Similarly, in determining the role of those on the property, (in relation to the pressure sewerage system), there is the recognition that the person (/s) residing on the property is not always the property owner, and the person (/s) to whom the sewerage rates and other sewerage information are normally sent.

The Council Pressure Sewerage Policy recognises these two groups individually and where the property owner is different to the resident their specific requirements are

spelt out in the sections below. Where they are the one in the same, the property owner assumes responsibility for both sets of requirements.

7.1 Role of the Property Resident

The Property Resident is required to:

- Notify Council immediately if the alarm sounds or the system overflows or displays any other fault. Failure to notify Council will see the responsibility for any environmental consequences remain with the resident.
- Not discharge into the pumping unit any of those substances identified in the Home Owner's Manual as being inappropriate for discharge into the sewerage system.
- Read the Home Owner's Manual that applies to the pressure sewerage system and keep it in a location that it can be readily retrieved if required.
- Comply with all the other requirements set out in the Home Owner's Manual. These range from flushing the pumping unit before going on holidays to not turning off the power to the pumping units when going on holidays. This is required to guard against leaking taps or fittings in the dwelling's internal plumbing.
- Not to interfere with the operation of the pumping units, in accordance with what is detailed in the Home Owner's Manual nor try and turn off any valves.
- Act responsibly with these systems.
- Not to try and access the pumping unit or any of the other fittings such as the electrical control panel. The pumping unit represents a confined spaces environment and may be extremely dangerous without appropriate equipment and training.
- Pay the power bills applicable to the property in a timely manner to avoid power being cut off to the property.
- Ensure the maintenance crews will have reasonable access to the pumping unit when they are called to rectify the unit. The Home Owner's Manual sets out what is required here.
- Contact the property owner (or their agent) if there is a problem in the sewerage system upstream of the pumping unit as this is the property owner's responsibility. The resident should then keep an eye on the repairs and if they are not satisfied that these are being carried out correctly they should contact the property owner and convey their concerns. If there is still a problem after the repairs, then this should be again reported to the property owner.

7.2 Role of the Property Owner

The Property Owner is specifically required to:

- Ensure the resident (if different from the property owner), understands that the property is serviced by a pressure sewerage system and that they have a copy of the Home Owner's Manual. They should stress to that resident through the real estate agent, the need for them to comply with the Home Owner's Manual.
- Ensure the pressure sewerage system is inspected in terms of access for the maintenance personnel and other obvious signs of potential poor performance, as part of the formal property inspections periodically carried out by the property owner.
- When contacted by a property resident that there is a problem with the household sanitary plumbing that is the responsibility of the property owner, Council has an expectation that the property owner will have a plumber attend to this problem in the shortest possible timeframe. Where this does not occur and Council becomes fearful that the pressure sewer system is being compromised then Council may intervene and the home owner will be charged Council's costs.
- Understand the limitations of the sewerage system particularly if the application is for a non-residential application, and not seek to operate outside those limits. These systems may require relatively rapid response from Council for repair purposes and thus this needs to be effectively provided to Council to allow timely repairs to be carried out.
- Pay the annual sewer rates as applicable.
- Ensure that there are no works carried out on the site that might interfere with the operation and maintenance of the pumping unit.
- Ensure that any proposed modifications to the site that may impact on the pressure sewerage system are communicated to Council before any such works are carried out and that Council approval is given to those modifications.
- Ensure there are no inappropriate discharges from the site (where possible) particularly for non-residential applications. This will be determined from visual observations made during inspections when the property is rented.
- Enter a maintenance agreement (Customer Service Agreement) with Council and this will apply for 99.9% of applications. There may be some separate systems where the property owner wishes to pursue a maintenance arrangement with a different agency and in these instances the property owner will need to submit details of this arrangement to Council as per section 5.5.

8.0 ACCESS FOR COUNCIL MAINTENANCE PERSONNEL

Council's policy stipulates that under the Customer Service Agreement Council will have the customer's consent to come onto the property to maintain the on-property pressure sewerage system. In this process the property owner is expected to assist the Council personnel by ensuring they will always have access to the pumping unit to carry out the repairs required in a timely and safe manner.

Details of the Council requirements for access will be detailed in the Home Owner's Manual. Where the resident has not provided reasonable access, Council may refuse to provide the service call in accordance with its Pressure Sewerage Policy. Alternatively, in these instances the property owner/ resident may be charged any additional costs incurred by Council or having to return to the site or for any unnecessary work done by Council, in repairing the unit.

Some key aspects in respect to access that need to be noted are:

1. The unit is not to be buried, nor paved over, nor concreted over, nor permanently covered in any manner.

2. Where there is landscaping that has been carried out around the pumping unit this should be minimised to allow Council access. Council will endeavor to minimise any damage to the landscaping, but not be held liable for damaging such landscaping, where it has interfered with the normal operation of the pumping units.

3. When Council personnel come to repair the unit, it must be uncovered and accessible. If Council personnel are unable to locate the unit because it has been covered, Council may:

   - Refuse to carry out repairs until the owner/ resident exposes the unit, and it may charge the resident a service call, even if the unit is not repaired.
   - Pass on to the resident any additional costs to locate and uncover the pumping unit.

4. If pets are not secured, Council personnel may refuse to enter the property and carry out any repair works, where they cannot contact the resident to secure the pets. In these instances, Council will not be held liable for any repairs not being carried out and it may elect to send a service call invoice to the resident to cover the visit to the property. Similarly, Council will not be held responsible for any pets that escape during repairs where the owner has failed to secure them. However, all reasonable care will nevertheless still be exercised during the repair period.

5. Access through any gates leading to the pumping unit for a trolley device will be required. The Council personnel will need to place a lifting frame above the pumping unit to lift out the pump and then carry the pump away to their vehicle, and thus they need a path for the trolley. Any resident that closes off this access way will be responsible for any additional costs incurred, particularly if additional equipment, such as cranes etc. are required.

6. Any residents with "secured" properties must be present to allow the Council personnel access to the yard at the agreed time, based upon arrangements made when the resident calls to notify Council of the system failure.

Note:

The NSW Local Government Act also gives Council the right to enter the property but Council would prefer this be done by consent under the Customer Service Agreement with property owners understanding that this is a condition of being serviced by a pressure sewerage system.

9.0 IDENTIFICATION OF COUNCIL MAINTENANCE PERSONNEL

One of the differing aspects of pressure sewerage systems is that Council maintenance personnel will now be required to work on the property, and as such Council understands the need for residents to be assured that anyone coming onto their property is indeed an approved Council employee, or agent. Accordingly, under Council's Pressure Sewerage Policy directions, the following provisions have been made in relation to property entry to provide this reassurance:

- Council or its agents will normally come onto the property in response to a resident request for maintenance work to be undertaken on the pumping unit or property service line.
- Any Council maintenance personnel entering private property will have photographic identification and appropriate authorisation to enter the property (as per the Local Government Act). If residents are present, Council personnel shall show their identification to the residents on entering the property.
- Where residents have indicated that they are happy for Council maintenance personnel to repair the units in their absence then this will be done. Otherwise entry onto a property where there is no one present will be restricted to where there is reasonable likelihood of a serious risk to public health without Council carrying out the required maintenance in a short time frame. Council has this power under Section 193(3) of the Local Government Act.
- If Council were to use an external agency to carry out repairs on the property, it will issue those individuals with appropriate photographic identification, as proof that they have been engaged by Council to carry out the pressure sewerage work. These external agencies will also be required to return all authorisations and identification to Council at the completion of their period of engagement and this will be checked.
- If some unforeseen event requires investigation, Council will endeavor to provide prior written notice to ensure the resident can check that the activities being undertaken are Council sanctioned. Where the works are urgent and this written notice is not possible, Council maintenance personnel will find an alternative means to provide residents with the reassurance they require on a case by case basis.

Council encourages residents to refuse access to their property to any person who endeavors to enter a property without the appropriate identification and authorisation.

Residents should in these incidents call the Police (and Council) to report the incident. This is to be reflected in the Home Owner's Manual to remind residents not to grant unauthorised access to their property.

10.0 NEW SUBDIVISIONS (DEVELOPER POLICY)

One likely area where pressure sewerage may be adopted is for new Developments (Sub Divisions). In these instances, Council's Pressure Sewerage Policy assigns to the Developer all the costs and responsibility for delivering a pressure sewerage system, where the adoption of that technology has been accepted by Council, for their development (or subdivision). Council's Pressure Sewerage Policy defines the pumping unit and the line between the pumping unit and the boundary kit as being part of that pressure sewerage system the Developer is required to provide.

As normal industry practice is not to install the pumping units on the property until the property dwelling is nearing occupancy, the Developer is relieved of this responsibility by the payment of a Property Levy. Thereafter Council assumes responsibility ensuring the installation of the pumping unit and the property service line is carried out (refer Section 10.2). The Developer is then free to proceed to the sale of the land.

The Developer nevertheless must provide the collection mains to service the individual properties up to and including the interconnection of each property with that collection system. The Developer's construction responsibility on the property terminates with the construction/ installation of the Boundary Kit on the individual properties in the Development.

The ownership of these systems and the units will ultimately transfer to Council for operation and maintenance and thus all pressure sewerage systems need to be in accordance with Council's dedicated Engineering Standards for Pressure Sewerage Systems. As constructed the pressure sewerage assets must be fit for the purpose intended. If they do not meet these requirements, the assets will remain the property of the Developer until they are deemed by Council staff to comply with the Council Standards. These standards also describe the processes that will be followed for the assets to be handed over to Council and the conditions before Council will accept that handover.

10.1 Approval to Use a Pressure Sewerage System

The Developer, in their Development Application, will indicate their proposed method of sewering their Development. Where they are connecting to an existing pressure sewerage system they need only state they propose to continue the use of this technology in their Development.

Where they are proposing a pressure sewerage system be connected to a more traditionally sewered area, Developers need to clearly state in their Development Application why they want to use pressure sewerage in their system. Developers are reminded that just because pressure sewerage may have the lowest capital costs to the Developer this may be insufficient justification for its adoption in a particular location. Therefore, the Developer needs to fully justify this choice using the criteria set out in Sections 1.4 and 1.5 of this Code of Practice.

Developers also need to identify their proposed discharge point for their pressure sewerage system into the existing collection system so that Council can analyse this and determine if this discharge point is suitable or another discharge point may be required. In some instances, there may need to be augmentation to the downstream sewerage system and if this is the case these costs may be in addition to the Developers headwork's charge. Therefore, to assist Council, the Developer's designers are to identify the loadings likely to arise from the proposed system and clearly state these in their submission or any preliminary discussions with Council. The Developer also needs to ensure that their proposal accords with Council's Developer Services Plan.

Council will formally confirm its acceptance or rejection of this technology in its response to the Development Application. Where it rejects the technology, it will set out its reasons as to why this technology has been rejected.

Council officers will be available to discuss with Developers, Council's requirements for the adoption of a pressure sewerage system and as such it would be hoped that many of the issues in relation to the potential adoption of this technology could be resolved before any formal development application is lodged.

10.2 The Pressure Sewerage Process in New Developments

If approval has been granted for the use of pressure sewerage, then the Developer Process is intended to occur in the following manner within the Richmond Valley Council Area:

- The Developer is responsible for the design and installation of the common collection system up to and including construction of the boundary kit on each property. This includes the connection to the Council designated discharge point. As such a formal design needs to be prepared.
- The design needs to be agreed to by Council prior to construction and the system must be to the standards specified by Council.
- The Developer will after construction formally apply to Council for handover of these collection assets to Council as per the procedures set down in Council's Pressure Sewerage Engineering Standards. Assuming there are no handover problems, the assets will transfer to Council for their ongoing operation and maintenance. This includes the periodic replacement of the pumps.
- The Developer will provide Council with all drawings and other "work as executed" information required by Council prior to handover.
- The Developer will ensure that the Section 88B Instrument (of the Conveyancing Act 1919) in respect to the perspective properties records that this property is serviced by a pressure sewerage system.
- Once the Developer has paid their Levy, carried out the civil works and provided Council with all information required, their responsibility is effectively finalised. Assuming the above is completed and the Levy payment is received, then Council will release the linen or any other impediment to allow the land to be sold.

- Council will then hold the Levy funds until the properties are built on.
- Council will maintain a list of Accredited Installers to carry out the design and installation of the on-property works. Only Accredited Installers will be used to carry out this work on the properties.
- When the property is ready to be built upon, Council will make available to the property owner the list of Accredited Installers. The property owner will then be responsible to contact these installers to organise the design and installation of the on-property works.
- Council will make available to the Installer one of the pumping units on request for a dwelling as that dwellings nears completion.
- The pumping unit will be formally commissioned (by the Accredited Installer) before the property owner moves into their new dwelling (home).
- The property owner will be responsible to provide Council with the work as executed drawings.
- Council will provide the property owner with a Home Owner's Manual for the pumping unit.

The above development process will essentially be similar for non-residential applications, excepting that the Developer will need to set out the parameters on which their design has been carried out, so that changes in uses of the property will not compromise the pressure sewerage system.

10.3 Design of the Collection System

The design of the collection system is seen by Council as critical to the success of the pressure sewerage system. The Developer is therefore required to demonstrate that their proposed design has been:

- Carried out by a suitably qualified and experience pressure sewerage designer.
- Complies with Council's Pressure Sewerage Engineering Standards.
- Complies with WSAA Code 07 for Pressure Sewerage Systems on matters not covered by Council's Engineering Standards.

The drawing format will be as per Council requirements and must be provided to Council for concurrence before construction can commence. The design is not to be modified under any circumstances by the Developer without a written confirmation from the designer to Council. That confirmation must state why the changes are being made and that the changes will have no impact on the development's overall design integrity.

The design must also include a flushing program for any collection mains network that is to be installed. That program is to be linked to the expected rate of development of the subdivision, with the critical number of developed properties for full self-cleansing flows to be set out in the Developer's submission. The program should indicate the

expected time the subdivision is likely to take to achieve this critical number and the basis of this figure. This program must be signed off by the System Designer.

A typical format is set out below as a guide to the system designers of what Council requires of them in providing a flushing program. It is a guide only and should not be adopted as a default flushing program. The System Designer can align different milestones with different flushing periods to co-ordinate the overall flushing program with any staged development proposed by the Developer.

Percentage of Subdivision Developed (%)	Average Time Between Flushes (Months)
10	4
25	6
40	9
60	12
80	24

Sample Table of Flushing Linked to the Development of the Subdivision

10.4 Technology to be Used

Council will only accept the handover of the technology appended as Attachment No 2 in this Code of Practice to minimise its costs in terms of spares and skills training. Council may after 2015 review this technology, but until that time it will not accept for handover any system designed based on the use of an alternative technology.

Should there be any changes to that Technology before that date then an amendment will be sent to all bodies who have taken out copies of this Code of Practice over the last two years before that change in technology was made.

All details in relation to how to apply this technology will be as per the Manufacturer's Instructions and Council's Engineering Standards for pressure sewerage systems.

10.5 Installation of the Collection System

The Developer will install the collection system in accordance with Council's Engineering Standards for Pressure Sewerage Systems. The materials to be used in that collection system must also be those specified as acceptable in those same standards. Attention must also be paid to the colour of the pipe to be used for the collection system. This must with an off-white stripe as per the WSAA Standards for pressure sewerage systems but if the Developer is unable to obtain that pipe they may apply to Council to use all black pipes.

The Developer can purchase the Boundary Kits and Flushing Points, specified in Council's Engineering Standards for Pressure Sewerage directly from the Technology Supplier, providing they are the genuine parts of the preferred technology. Alternatively, they may procure these from Council where Council has a contract in place and has sufficient in its stores to accommodate the Developer's needs. Council intends to operate a period contract directly with the Technology Supplier for the supply of spare pumps and spare parts generally and the Developer can access the parts they require through this contract arrangement where this arrangement is current. However, Developers need to place any orders in sufficient time for Council to procure them and Council will not accept any responsibilities for delays the developer may experience through this process.

Once the mains have been installed they are to be formally handed over to Council via the formal handover procedures identified in Council's Pressure Sewerage Engineering Standards. The initial handover inspection costs will be as per Council's Fees and Charges. Subsequent handover inspections will also attract a fee as set in Council's annual fees and charges. Council personnel will cease their inspection if a significant number of faults have been noticed, as this handover process is not intended as a progress check on the Contractor's progress.

Accurate and up to date "Work as Executed" drawings are a condition of handover of the collection system.

10.6 Minor Subdivisions

For a minor residential subdivision (a development of 1 to 5 properties) in an existing sewered area, it is unlikely that the existing collection system will require any upgrading. It is also intended that the Developer should not for such a small subdivision have to incur the full design regime for a detailed pressure sewerage system as set out in the sections above unless it is necessary.

In these instances, the Developer need only construct an extension to the existing collection system as per the Council Pressure Sewerage Engineering Standards and meet the costs as advised for this Development as advised by Council in response to the Development Application. Council will carry out the live connection into an existing collection main. Alternatively, Council may undertake these works with the developer meeting Council's costs to carry out these works.

The exception to the above may be where several such minor subdivisions have been carried out on that location or upstream of the line the new development proposes to discharge into. In this instance, some collection system capacity augmentation may now be required despite the small size of the proposed development. This will be the result of the cumulative load and Council will investigate the impacts of the subdivision and advise the Developer. Council will in this situation augment the collection system before the Development can proceed. The Developer will contribute towards this additional system capacity and this will need to be done before Council carries out the work, with Council advising the Developer what the costs will be.

10.7 Property Levy

The Property Levy will cover the following:

- The costs to purchase the pumping unit for the property.
- A Developer contribution towards the mains flushing required until the Development (subdivision) meets the critical number of dwellings the system has been designed to service, wherein flushing will fall within the normal pressure sewerage maintenance arrangements.
- A Developer contribution towards the additional spare pumps Council will need to maintain to ensure all homes can be serviced to the "Levels of Service" set out in the Council Policy Document on Pressure Sewerage Systems. This contribution also includes the additional general spares inventory required for this maintenance work.
- Administrative costs incurred by Council in administering the installation process.

The following will not be included in the Property Levy and will need to be paid for by the property owner:

- The design of the on-property works.
- The supply and installation of the property service line.
- The installation of the pumping unit including all electrical and plumbing connections.

All funds held from the Property Levy will be held separately for each subdivision and will be fully acquitted on a Development by Development basis. The Levy will be applied based upon standard installations on each property and a price per property across the development determined.

It should be noted that this levy does not include the headwork's contribution the Developer would be expected to pay for their part of augmenting downstream works. This remains a separate charge payable directly to Council and Council will advise the Developer at the time of the submission for the new development as per Council's DSP plan.

This Property Levy will be defined in Council's fees and charges so that it is well known to Developers before they contemplate what technology they wish to adopt for the application.

10.8 Developers Work as Executed Information

This must be in accordance with that requested in the Council's Pressure Sewerage Engineering Standards and must be submitted as part of the handover process.

10.9 Developers Wanting To Set up Alternative Operation and Maintenance Arrangements

It is not envisaged that Developers will want to be involved with the long-term operation and maintenance of the property's sewerage systems. Nevertheless, should a proposal be received for an alternative maintenance arrangement, it will not be considered by Council unless:

- It has a full written endorsement from the NSW Department of Health, specific to the application. Generalised statements that they have been consulted and are in agreement will be unsatisfactory.
- It has a full written endorsement from Department of Environment and Climate Change specific to the application. This will include how the effluent is to be disposed of as it may not be accepted into the Council system.
- It protects Council as the potential de-facto operator for at least 40 years (from any increased costs) should it inadvertently be forced to acquire such a scheme, particularly with the closing of the Contractor's business.

The proposal needs to set out in detail how the proposed operation and maintenance is to work and how the residents will receive similar levels of service to Council in relation to the ongoing operation of the pressure sewerage system.

10.10 Developer Timelines

Developers need to provide Council with appropriate time periods for the review of any drawings as well as notice of handovers etc. Delays by the Developer will not be a cause for Council having to accelerate its review processes.

Developers also need to be mindful that while Council may have a period contract to acquire the pressure sewerage components, these have lead times. Developers wanting to use the Council contract to acquire system components need to be mindful of this. Council will not formally order additional materials until it has a substantive pressure sewerage design before it, but will endeavor to maintain some spares at the Council depot.

Council will not be liable if the Developer's program cannot be met due to the unavailability of the Pressure Sewerage Technology or delays in notifying Council to allow the orders to be placed. This will also not be grounds for the adoption of an alternative technology.

10.11 Developer Assistance

Developers will be assisted by Council Staff in their potential use of Pressure Sewerage Systems by:

1. Having general information available to perspective land purchasers on what pressure sewerage systems are and what it will mean for the property owner to purchase one of these properties.

2. Having a Home Owner's Manual available to all property owners so they know what is expected of them in the operation of their pumping unit.

3. Having a full maintenance service to back up this technology should the residents require assistance once the units are handed over to Council.

4. Being prepared to discuss potential pressure sewerage applications before the formal submission in the Development Application.

10.12 Costs to the Property Owner

The cost of connecting the house plumbing to the pumping unit will normally be met by the property owner particularly in a new subdivision and these costs are not included in the Property Levy (refer to Section 10.7 for other costs which are not included in the Property Levy). The exception to this will be when these connections are made as part of some backlog programs where Council may elect to sewer the existing development as part of that scheme and in so doing meet some or all the costs involved. Broadwater is an example of this wherein Council has resolved to include the costs of connecting the compliant household plumbing to the pumping unit which will be covered under the scheme and will not be individually borne by the property owner.

11.0 SERVICING EXISTING AREAS OR PROPERTIES

Alternative to the new developments (subdivisions) will be the servicing of existing areas or existing properties that have not been connected to sewerage schemes. Typically, these situations will involve:

- Existing settlements where there have previously been no common sewerage services.
- Existing properties within a sewered area where a small number of properties have proven uneconomical to connect to the nearby sewerage system. Some of these may be vacant lots.
- Private pump up arrangements where an individual may need to own and operate their own pumping arrangement and discharge line to get their sewerage into the Council collection system.
- Specific installations to replace poorly performing on site systems where these may exist.
- Where there are problems potentially in the current reticulation system. For example, specific problems such as high rates of inflow and infiltration may warrant the need to convert a portion of the current conventional sewerage system to pressure sewerage.

11.1 Pressure Sewerage Installations in Close Proximity to Existing Gravity Reticulation Areas

Unsewered property owners near an existing reticulated area may request consideration for connection to the existing reticulated sewerage system using a pressure sewerage system. Where Council receives a request to explore a pressure sewerage connection it will undertake an initial determination as to whether a pressure sewerage system can be utilised. Applications will thus be examined on a case by case basis.

Council will where such a connection is possible, provide a preliminary estimate as to the costs for the property to be connected to the reticulation system. Should the property owner then indicate they wish to proceed Council will organise for such a connection to be made and will also undertake to provide the following additional items.

- A timetable of when such a connection can be made;
- A preliminary property design (in conjunction with the property owner).
- Initial contact with any nearby neighbours who might also wish to take advantage of such a scheme and who might share any reticulation main costs.

The cost estimate will include any connection fees for properties outside of the existing sewer catchments, the construction costs associated with the project, any identified audit costs as well as any costs to dispose of the existing on site system.

The 149 Certificates for these properties are then to be modified to reflect they are serviced with a pressure sewerage system if the construction proceeds.

11.2 Existing Private Systems

A number of existing properties discharge into a reticulated sewerage system through a private pumping arrangement. The owners of these properties will not be able to apply to Council to take over the operation of these schemes, unless they can demonstrate their systems comply with Council's standard specification for pressure sewerage systems. However, these same property owners can make an application to have their systems converted to a standard Richmond Valley Council pressure sewerage system that will be operated by Council. The property owner will meet all costs associated with this conversion.

Where such a conversion to a pressure sewerage system has been made, then the 149 Certificates for that property will be modified to reflect they are now serviced with a pressure sewerage system.

Where property owners have these private pumping arrangements they will not to be required to convert to a designated pressure sewerage system where they can demonstrate that their existing systems are performing satisfactorily.

11.3 Pressure Sewerage Installation in Backlog Areas

A backlog area is an existing area that is currently not serviced by any form of sewerage scheme but is to be subsequently sewered as part of a specific project being run by Council. Such a project may involve funding from other sources and that may lead to some differences to those set out below.

In these instances, Council will be responsible for:

- The choice of the sewerage technologies and within this Code of Practice it is assumed that the technology selected will be the adoption of a pressure sewerage scheme, hence the remaining items are applicable.
- Having a design completed for the sewerage system and will then liaise with the community on that design explaining the features of the technology.
- The supply and construction of the collection system.
- The supply and construction of the on property works for those properties that have a dwelling on them at the time of the schemes construction. This will include all electrical connections.
- The residents will be required to meet the costs for any upgrading of the household electrical and plumbing connections, but can have these carried out through the scheme with the property owner simply meeting the costs advised by Council. This will include any costs that may be incurred to connect existing swimming pools, spas, etc.
- Completing all records including WAE drawings and have the property 149 Certificates updated to reflect the amended conditions.
- The residents would be required to render the redundant on site systems safe as per Council's guidelines.

Note:

For the Broadwater scheme, Council will meet the costs of connecting the properties compliant plumbing to the pumping unit but that position will be reviewed after the Broadwater experience.

11.4 Audit of Existing Properties

Where a pressure unit is to be installed to service an existing dwelling (where the dwelling is more than 24 months old) the Accredited Installer organised by Council will undertake a full audit of the existing dwelling's power board and plumbing connections. It is assumed that this will occur either in the servicing of an existing property that could not previously be sewered prior to the adoption of pressure sewerage or in an overall unsewered area that is about to be sewered.

If the audit shows the need for these connection points to be upgraded to meet the relevant electrical and plumbing standards, then the Installer will inform the resident of what needs to be done to bring these connections up to a suitable condition. In the case of a backlog scheme Council will send out letters to the property owners to inform

them of what works need to be carried out to upgrade their connections and the property owner will be responsible for getting these works carried out including meeting all costs. The property owners may:

- Engage their own tradespeople, to carry out this work, providing this work can be done in a timely manner and within the timeframe set out in the Council/ Installers letter.
- Engage the Installer to have these works carried out on their behalf.
- For those properties that are part of a Backlog Scheme then these property owners may alternatively request that Council organise these works under the Backlog Scheme and separately pay Council for the works, at the prices identified to the property owner by Council, in its notification letter.

12.0 INSTALLATION OF THE PUMPING UNITS (RESIDENTIAL)

Council requires that the on-property components of the residential pressure sewerage system are constructed as set out below:

1. The installation of the pressure sewerage pumping units must only be carried out by Installers who have been appropriately accredited by the Technology Supplier to carry out such an installation. Council will maintain a list of Accredited Installers and will make this list available to the property owner.
2. The actual installations are to be carried out in accordance with the Technology Supplier's Installation instructions and the Council Engineering Standards for Pressure Sewerage Systems.
3. Each residential connection will be based on only one standard pumping unit per residential property excepting where permission has been given by Council for a specific variation.
4. Council will provide the pumping units to the Installers as part of this installation process.

In the case of new subdivisions specifically designed for pressure sewerage the property owner will only be required to meet additional costs over and above what might be termed a standard connection. For example, if additional storage is required to accommodate the loads caused by a swimming pool, the property owner would meet these costs. They will also be required to meet the costs of the installation of the pumping units and property service line.

For existing or backlog areas, the installation of the pumping unit and the property service line will occur under those schemes with the property owner simply meeting any installation costs they have been advised by Council prior to that scheme (Refer Section 11). These costs will be limited to those properties that were constructed at the time of the scheme as the pressure sewerage system can only be installed where there is an existing dwelling.

For all other applications where there is a vacant lot serviced by a boundary kit the property owner will meet the full cost of the installation of the on-property pressure sewerage components. These properties will be treated the same as these properties in new sub-divisions, i.e. payment of the Property Levy, etc.

Note

For Broadwater Council will be including the cost to connect the compliant house plumbing to the pumping units as part of that sewerage scheme. Property owners however will be required to meet any costs to upgrade their own electrical and plumbing services to meet the relevant standards as applicable. Refer section 11.3

13.0 INSTALLATION OF THE PUMPING UNITS (NON-RESIDENTIAL)

Most non-residential installations will be treated identically to the residential applications and will have this same standard pumping unit installed. Typically, this will cover basic applications such as shops, small restaurants, small offices, etc, will also be based upon a single standard unit per property. These will be treated identically to the residential connections as set out in Section 12.

There is however several applications, where the water output will exceed the capacity of a single unit and these will need to be serviced by:

- Multi-pump applications
- Multiple single pump applications.
- A series of multi-pump applications.

Typical installations here would be larger motels/ hotels, water using industry, commercial car washes, commercial swimming pools etc.

These non-standard units should be based upon a pumping unit (multiple or otherwise) that falls within the range of products available from Council's pressure sewerage Technology Supplier. In these instances, Council will endeavor to provide the units under its supply contract where possible after it has time to get a response from its Technology Supplier as to their availability. Council will not be held liable for any delays in achieving delivery of the unit by the Technology Supplier in these instances. If the requirements of the property lie outside of the product range then the supply of the unit will be the responsibility of the property owner, but still subject to Council concurrence that it can maintain the unit.

The property owner will be responsible for the design and installation of these non-standard units and for meeting all of the costs involved. The only exceptions for this would be for new subdivisions that had been specifically designed for an industrial estate or where the application was part of a dedicated sewerage backlog program. In the case of an industrial subdivision the property owner would pay only those costs that are over and above the property levy paid by the Developer should their application exceed what was allowed for. In the case of the backlog program the property owner will pay that cost advised to them by Council.

Discharges from these connections will only be permitted into a collection system that can handle them. If the collection system requires upgrading, this will be done but

it will be at cost to the property owner. Therefore, all non-standard units must be tested at flowrates similar to those of the proposed application.

13.1 Large Industrial Estates

The owner of large institutions (i.e. applications that have a significant internal pressure sewerage system) as well as retirement villages or even gated secure developments will be responsible for the design and operation of the on-property pressure sewerage systems. They may elect to:

- Have this work carried out by an appropriately accredited organisation for the installation and operation.
- Have Council undertake this work on their behalf, as a commercial arrangement.

In all instances, Council requires the following:

- The on-property layout is carried out by an experienced designer based upon the actual anticipated sewerage output.
- The on-property design will require Council approval prior to construction. Council will forward copies of the plans to regulators for their subsequent concurrence.
- The pumping units must comply with Council's Engineering Standards and be of a technology compatible with Council's collection system design, where it discharges into a pressure sewerage system.
- If the body responsible is discharging to a conventional discharge point other pressure sewerage technology can be used but Council will not be able to maintain these systems and will never take them over. Council will not be a de-facto fallback position in these instances.
- Council is to be given sufficient notice if it is to pursue providing the pumping units.

13.2 All Installations

All non-residential installations require the usage of an Accredited Installer with the property owner meeting that Installer's costs.

All non-residential units must be tested at flow rates similar to those of the proposed application (i.e. the design flows) to confirm the impacts on the downstream infrastructure. If that downstream infrastructure is found to be inadequate this will need to be augmented before the system can be operated on a day to day basis.

13.3 Dedicated Non-Residential Developments

In the case of a dedicated industrial development using pressure sewerage the Developer will be asked to provide a basic property levy which will be based on a set discharge. Where the discharge is less than that allowed for the property owners costs should be covered by that levy. If, however the final determined discharge of

The development exceeds what has been allowed for then the property owner will be required to meet the costs of any downstream infrastructure augmentation.

Council will monitor the total impacts of the industrial development on any downstream infrastructure allowing for some “unders” and “overs” within the final build out of the estate.

14.0 TRADEWASTE APPLICATIONS

For non-residential applications where the wastewater quality is of a non-domestic nature then it must obtain a trade waste licence as per Council’s formal Trade Waste Policy (based on DWE requirements). Advice in relation to this will be obtained in discussions with Council as part of any Development Application.

If it is deemed by Council officers that a particular trade waste discharge may be deleterious to the pressure sewerage system, then approval for the application will be refused or the applicant may be required to pre-treat their wastewater before discharge into the sewerage system.

Council intends here that each such application will be evaluated on a case by case basis and whatever terms may need to apply to that application will be so applied, to ensure both the safety of the sewerage system and the provision of sewerage services.

15.0 HOME OWNER’S MANUAL

Council will ensure all property owners receive a manual that guides them on what they need to do with their pressure sewerage pumping unit (particularly if the alarm was to activate). It will also detail what is expected of them in their day to day operation of their pressure sewerage systems. Council will also ensure that this manual is kept up to date, based on their experiences with pressure sewerage over time. Revised editions of the manual will be re-issued to property owners.

Council’s Pressure Sewerage Policy requires the Installer will be expected to explain the manual to the home residents when they install and commission the pumping unit. Council will always ensure there are sufficient manuals available to property owners and residents to replace any lost manuals. They will be available on request.

A contact number sticker will be placed on the alarm/control panels should the resident not be able to find the manual, when they need it.

16.0 MODIFICATIONS TO THE PRESSURE SEWERAGE SYSTEM OR HOUSEHOLD ADDITIONS

Installing a pressure system allows the property owner some flexibility in terms of householder modifications or even just a desire for extensive “on property” landscaping. In adopting pressure sewerage Council is keen to see some of the advantages it brings to the provision of sewerage services adopted, and this is one such advantage.

The property delivery main can for example be quickly re-laid downstream of the pumping station at relatively minimal costs, thereby eliminating the difficult problems that can arise when wanting to build extensions over this property sewer. Thus, whilst building over the pressure sewerage system will not generally be allowed, the property owner may apply to Council to relocate the "on property" pipeline or even the pumping unit if this is technically feasible. Council will permit such relocations subject to:

- The hydraulics on the property allowing the pumping unit to be moved.
- There is a suitable alternative route for the property delivery pipeline if this is all that needs to be moved.
- The associated costs for the relocation works being met by the property owner.
- Any other technical requirements, as specified in Council's Engineering Standards must be met.
- Full details of the "as constructed" works, are to be provided to Council.
- Such modifications can only be carried by an Accredited Installer.

A formal submission for any such modification must be made to Council before any such work is contemplated and Council will indicate if the modifications can proceed and the conditions applicable to those modifications. Council will take punitive action against any party that modifies their on-property system without prior approval under Section 635 of the Local Government Act of 1993.

Further on this topic it is stressed that the use of a pressure sewerage system does not prohibit any of the modern high volume discharge appliances such as spa's and swimming pools, but it does require that appropriate provision be made to accommodate these high rate discharges. Council will work to assist the property owner in this respect and will have specific advice on its web site in relation to these matters.

16.1 Spas

Spa owners within pressure sewerage areas need to contact Council who will advise on the correct way to discharge from the spa into the pressure storage unit, to avoid alarms being unnecessarily triggered. Formal approval will also need to be given to any agreed format of discharge and further approval will be required to vary this at any future stage.

The costs for any additional equipment over and above the basic on property system that is required to be installed to accommodate large sudden discharges from the Spa's will be met by the property owner. Owners proposing to install a spa in an area service by a pressure sewerage system must advise Council prior to installation, to ensure that the rate of discharge will not cause any problems with the operation of the pressure sewerage systems.

16.2 Swimming Pools

In pressure sewerage areas Council requires that any property owner currently owning a swimming pool (or installing a swimming pool in the future) regulate their pool backwash volumes and rates so as not to exceed the capacity of the pumping unit and to avoid alarms being needlessly generated.

There are several ways to drain or backwash pools without causing an alarm, as set out in Council's Engineering Standards. In general, these will be dealt with on a case by case basis.

For any proposed pools in an area serviced by pressure sewerage, the agreed format of discharge will be covered by a condition of consent for the dwelling or pool.

For existing pools, Council will issue formal approval to an agreed format of discharge as part of the Customer Service Agreement with the property owner. Pool owners requiring further information should contact Council.

The costs for the additional equipment over and above the basic on property system that is required to be installed to accommodate large sudden discharges will be met by the property owner.

17.0 PRESSURE SEWERAGE COSTS TO THE INDIVIDUAL PROPERTY RESIDENT OR PROPERTY OWNER.

Properties serviced by a pressure sewerage system will pay an annual sewerage rate that is set by Council as part of its annual fees and charges. All normal repairs and even the eventual replacement of the pumps will be covered by this annual sewerage rate. Thus, repairs to the pressure sewerage systems and the other operational costs will be aggregated across the entire pressure sewerage systems.

Residents will only be separately charged in relation to these pressure sewerage systems where their negligence has resulted in damage to the system and or additional costs to Council in the carrying out of repairs.

18.0 Property Diagrams (Information)

As part of the initial installation a property layout drawing will be produced and modified to reflect the final "as constructed" drawings. Council will thereafter, on behalf of the property owner, maintain a copy of this house service drawing. Copies of these drawings may be obtained from Council during normal office hours. Costs associated with obtaining copies of these diagrams will be as established in Council's annual fees and charges. These plans will be available to property owners through the Council GIS system.

Attachment 1

DEFINITIONS

Set out below is a series of commonly used terms in relation to pressure sewerage to ensure a consistency in the interpretation of this document and other COUNCIL documents on pressure sewerage systems. If there are any other terms that require further interpretation, then this interpretation will be provided by Council's Engineering Services Department.

- **Accredited Installer** – an installer accredited by the Technology Supplier in accordance with Section 12 of the Pressure Sewer Policy for undertaking all the on-property works.
- **Alarm/Control Panel** – Small box that houses either or both the electrical controls for the pressure sewerage pumping unit and the alarm control system for the pumping unit. Composition of what this box includes can vary from Technology Supplier to Technology Supplier. It will normally be affixed to the property wall or a separate standalone post.
- **Alarm Volume** – This is that volume of sewerage that is stored in the on-property storage vessel, before the alarm for the storage vessel activities. It is measured from the normal pump on setting to immediately before the alarm activates.
- **Backlog area** – This is an existing residential area that does not currently have a centralised (or reticulated) sewerage system but will be sewered in total by a pressure sewerage scheme being installed by Council.
- **Backlog scheme** – This is the pressure sewerage scheme being installed by Council to service an existing area that is currently unsewered.
- **Boundary Valve kit** – This is a valve box at the property boundary incorporating an isolating valve, flow directional valve and an inspection tee piece.
- **Council** – This term should be interpreted to mean Richmond Valley Council and it successors.
- **Collection System -** This is the common pipeline system that collects wastewater from each individual property and transports it to the discharge point. It is sometimes referred to as the pressure sewerage reticulation system.
- **Designer** – This is the individual responsible for the design of either the pressure sewerage reticulation system or the on-property design (or both). Generally referred to as the System Designer.
- **D&C –** Design and Construction Tender/ Contract.

- **Emergency Volume**- This is the volume, which is stored in the pressure sewerage storage vessel from just above the alarm activation level to just before the overflow relief gully begins to discharge.

- **Flushing Point** – This is a formal point in the reticulation system to which a large supply of water can be connected under pressure to flush out the reticulation pipelines, or alternatively to remove sewerage from the reticulation system. Typically, this connection will be to a water (wastewater) tanker.

- **Flushing Program** – This is a fixed program of flushing the mains in an area to prevent the accumulation of materials in the pipelines. Typically, these are required in new subdivisions where the smaller numbers of residents are insufficient to generate the velocities required to clean the mains.

- **High Level Alarm** – This is both an audio and visual alarm system activated when the level of the sewage in the on-property pressure sewer storage vessel reaches the alarm volume level.

- **Installer** – This is the company/ individual responsible for carrying out all the on-property works (also referred to as Accredited Installer).

- **Lateral Spur** – This is the continuation of the property service line from the boundary kit to the reticulation system pipeline and includes any road crossings (where applicable).

- **On-property Works** – These are the total works to be carried out on the residential/ commercial/ industrial property and include any excavation, installation, compaction and restoration associated with the following.

    - The pumping unit
    - The property delivery pressure line
    - Wiring of the pumping unit to the property power board
    - Connection of existing property sewerage lines to the pumping station.

- **Overflow Relief Gully** – This is a control overflow device to prevent overflows occurring inside the dwellings on the property, by ensuring that as such overflows occur outside of the dwelling. Its arrangements and dimensions are set out in the Australian Standards for Residential Plumbing (AS 3500).

- **Non-Residential Connection** – This is a pressure sewerage connection for other than a domestic residence such as a shop, school, office etc. These may either still be serviced by a standard residential connection or require a totally non-standard connection depending upon the nature of the property being serviced.

- **Pressure Sewerage Reticulation System** – the series of pipelines laid in the streets connecting the properties to the designated discharge point, also referred to as the collection system.

- **Pressure Sewerage Systems** – This is a specialist system wherein all of the property sewage is connected to an on-property pumping station (or series of pumping steps). This dedicated pumping unit incorporates a grinder to reduce solids in the sewage to watery slurry. The pumping station then discharges through small diameter pipelines laid at minimum depth.

  Council's pressure main reticulation systems rely on the pressure generated by all the "on property" pumps in the system to move sewage from the pumping unit to the treatment plant, pump station, or the set discharge point in a gravity reticulation network.

- **Property Service Line** – The pipeline that connects the on-property pumping station to the boundary valve kit.

- **Pumping Units (or Station)** – this includes the pumps, storage vessel, alarm/control panel, pump pressure switches, etc. and is installed on the property.

- **Residential Connection** – This is an installation based on a standard sized pressure sewerage pumping unit and property service line to service a residential dwelling. The number of bedrooms in the home will normally be irrelevant to this installation excepting where it moves beyond a reasonable residential application such as a boarding home.

- **Reticulation Zone** – This is a collection of properties, that are capable of being isolated from upstream and downstream areas during the construction phase and are clearly marked as such on the reticulation drawings. The zones are used to allow one area to become operational (i.e. the pumping units to be installed) whilst the upstream areas are still being constructed.

- **Storage Vessel** – This is the water tight container in which the on-property pump is located and is typically made from plastic compounds or fiberglass.

- **Technology Supplier** – That company which supplies the pumping units. This company may be the manufacturer of the technology or an appointed agent of the manufacturer.

- **WAE Drawings** – These are the Work as Executed or as Constructed Drawings.

Attachment 2

COUNCIL ADOPTED PRESSURE SEWERAGE TECHNOLOGY

Council has adopted the following pressure sewerage technology for use in the Council Area and will maintain systems using this technology where they have been approved for construction by Council. Use of alternative technologies will see those technologies not accepted for handover.

Note these technologies will be formally reviewed in 2015.

System Component	Technology Supplier	Model
Residential Pumping Units		
Pumping Unit	Environment One	W300P49AAT
Pumping Unit Storage Capacity	Environment One	2010iP-800x2100B (718L) 2012iP-1300x1600 (989L)
Pumping Unit Lid Type	Environment One	Polyethylene (US)
Flushing Point	Environment One	PC1264G01
Air Valves	N/A	
Isolating Valves	N/A	
Boundary Kit	Environment One	NB0184P02
Alarm /Control Panel	Environment One	SE3A210C2AL
Non-Residential Pumping Units		
Pumping Unit	Environment One	W300P49AAT
Pumping Unit Storage Capacity	Environment One	2014iP-1100x2200 (1337L)
Pumping Unit Lid Type	Environment One	Polyethylene (US)

Flushing Point	Environment One	PC1264G01
Air Valves	N/A	
Isolating Valves	N/A	
Boundary Kit	Environment One	NB0184P02
Alarm /Control Panel	Environment One	PA2146G01

List of the Pressure Sewerage Technologies to be used in the Richmond Valley Council Area (2009 -2015)