PENRITH CITY COUNCIL

POLICY DOCUMENT

POLICY NAME
On-Site Sewage Management and Greywater Reuse

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Environmental Health

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-

Purpose

The purpose of the policy is to guide landholders in the management of onsite sewage and waste water, to protect and enhance public health and the environment and to assist Council in prioritising resources.

Policy Statement

The policy outlines the objectives, goals, and regulations associated with on-site sewage and waste water systems, while providing guidelines on the inspection and assessment processes, including emergency response, education and action plan.

This policy applies to all staff, councillors, contractors and residents.

POLICY:

The policy commences on the next page.

On-Site Sewage Management and Greywater Reuse Policy

Penrith City Council

April 2014

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1. Introduction

1.1 Background

Penrith City Council is committed to implementing a program that regulates the operation of On-site Sewage Management (OSSM) systems to ensure best practice and to protect environmental and public health.

There are approximately 4300 OSSM systems across the Penrith Local Government Area (LGA), which covers approximately 407km^2 and includes sewered urban areas, sewered and unsewered rural villages and rural areas.

This policy has been developed to assess, regulate and manage the selection, design, installation, operation and maintenance of domestic and commercial OSSM systems. The document provides information to residents to assist with the installation application process. It also responds to the provisions of the *Local Government (General) Regulation 2005* that requires system owners to obtain approval for the operation of OSSM systems under Section 68 of the *Local Government Act 1993*.

This policy has been prepared with consideration of the *Environmental and Health Protection Guidelines - On-Site Sewage Management for Single Households*, *Australian Standard (AS/NZS 1547:2012) On-Site Domestic Wastewater Management*, and the *NSW Guideline for Greywater Reuse and Sewered, Single Household Residential Premises*.

1.2 Scope

This policy applies to:

- Existing and proposed domestic OSSM systems
- Commercial OSSM systems
- Greywater reuse
- Unsewered properties in the Penrith LGA

1.3 Objectives

The objectives of this policy are to:

- Guide landholders towards sustainable on-site management of sewage and wastewater
- Protect and enhance the quality of public health and the environment within the City
- Assist Council to prioritise resources for the efficient regulation and monitoring of OSSM systems within the City

1.4 Policy Structure

The structure of the policy is shown in Figure 1 below.

Figure 1 Policy Structure

Installing an OSSM system Council approval is required to install or modify an OSSM system	See Section 2.1
Operating an OSSM system A property owner requires an 'Approval to Operate' for all OSSM systems Operational Approval ⬇ Renewal of Operational Approval	See Section 2.2
Regulation of Program	See Section 2.3
Reusing Greywater	See Part 3
Connecting to Mains Sewer	See Part 4

2. Installation and Operation of On-Site Sewage Management Systems

2.1 Installation Approvals

The installation of an OSSM system requires approval from Council under Section 68 of the *Local Government Act 1993*.

The site assessment guidelines in Table 1 are used to assess applications. They are based on the following best practice guidelines and policy:

- Australian Standard 1547:2012
- Department of Local Government *Environmental & Health Protection Guidelines - On-site Sewage Management for Single Households*

Council will consider the following during site assessments for development applications and installation approvals:

- Impacts on the catchment
- Impacts on public health and the environment
- Suitability of the site
- Requirements and suitability of proposed or existing systems

The main systems operating in the City are Aerated Wastewater Treatment Systems (AWTS), Pump-out Systems and Absorption Trench Disposal Systems. Appendix E introduces some alternative wastewater options.

Once an OSSM system has been installed, an Approval to Operate is required to be obtained from Council to operate the system (refer to Section 2.2).

Table 1 Site Assessment Guidelines

Assessment Criteria		Low Limitation		Medium Limitation		High Limitation	
Flood potential		Above 1 in 100 year flood contour		Above 1 in 20 year flood contour		Below 1 in 20 year flood contour	
Exposure to sun & wind		Good		Can be improved		Poor	
Slope %	Surface irrigation	0-6		6-12		>12	
	Sub-surface irrigation	0-10		10-20		>20	
	Absorption system	0-10		10-20		>20	
Landform		Hill crests, convex side slopes & plains		Concave side slopes & foot slopes		Drainage plains & incised channels	
Run-on & up-slope seepage		None		Signs of minor seepage		High - diversion not practical	
Erosion potential		No erosion		Potential erosion		Signs of erosion	
Site drainage		No signs of surface dampness		Signs of surface dampness		Signs of saturation	
Rocks & rock outcrops (% of land surface containing rocks > 200mm diameter)		<10%		10-20%		>20%	
Environmentally sensitive areas		None		Identified as defined by SREP 20		Identified as defined by SREP 20	
Buffer distances (see Table 3)		Adequate				Inadequate	
Land area for effluent disposal (see Table 2)		Available				Not available	
Stormwater diversion		Good		Moderate		Poor	
Condition of tanks		Good		Minor work required		Major work required	
Condition of disposal areas & irrigation lines		Good		Minor work required		Major work required	
Condition of pump-out lines		Good		Minor work required		Major work required	

2.1.1 Installation of OSSM Systems

The information required with an installation application for an OSSM system is shown in Appendix A.

A Wastewater Assessment Report prepared by a suitably qualified consultant is required to be submitted with an application for the installation of a new domestic OSSM system when:

- the system is proposed within an area that has high limitations (see Table 1), or
- the proposed system is not an AWTS or a pump-out system, or
- the proposed system is not accredited (by NSW Health), or
- the buffers distances referred to in Table 3 cannot be met, or
- a dual occupancy or secondary dwelling is proposed and the OSSM system for either dwelling cannot meet the buffer distances of Table 3, or
- the proposed system is located within flood affected land (see section 2.1.7), or
- a subdivision application is being considered.

A Wastewater Assessment Report is also required with an application for the installation of a new domestic AWTS when:

- the Effluent Disposal Area (EDA) referred to in Table 2 is not provided, or
- the EDA is divided up into more than 2 separate areas, or
- a dual occupancy or secondary dwelling is proposed and the OSSM system for either dwelling cannot meet the EDAs of Table 2*, or
- the dwelling proposed has more than 6 bedrooms.

A Wastewater Assessment Report is required with an application for all commercial systems.

Appendix B outlines the minimum requirements for a Wastewater Assessment Report. Section 4 of the *Environmental and Health Protection Guidelines - On Site Sewage Management for Single Households* and *AS/NZS 1547:2012* can also be used as a guide when preparing a Wastewater Assessment Report.

* *An application for a dual occupancy or secondary dwelling needs to demonstrate that the property has sufficient area to allow for the upgrade or replacement of the existing OSSM system should it be required in the future.*

Table 2 Sizing of Domestic Aerated Wastewater Treatment Systems Effluent Disposal Areas

Sizing of AWTS Effluent Disposal Areas			
Suburb	**No. of Bedrooms**	**Surface and Sub-Surface Irrigation Areas (m^2)**	
		Reticulated Water	Tank Water
Sandy Soil Types ***Agnes Banks - east of Castlereagh Road. Castlereagh - north of Devlin Road and east of Castlereagh Road.***	**2**	584	467
	3	779	623
	4	973	778
	5	1168	934
	6	1326	1090
Clay Soil Types ***Most other areas***	**2**	417	334
	3	556	444
	4	695	556
	5	833	667
	6	972	778

***Notes**: (1) The irrigation areas in Table 2 are calculated using conservative figures to enable the sustainable management of effluent. A property owner can provide a Wastewater Assessment Report to support a proposal for a smaller irrigation area.*

(2) The Effluent Disposal Area (EDA) is based on nutrient balances as they are considered to be the most limiting factors in these areas.

(3) Figures in Table 2 are based on:

- *150 litres per person/day or 120 litres per person/day for tank water supply*
- *One person per bedroom and two for a master bedroom*
- *TN output value of 25 mg/L and a Critical Loading Rate of 27 mg/m^2/day*
- *TP output value of 12 mg/L*
- *P sorption capacity - 600,000 mg/m^2/depth for clay soil types or 400,000 mg/m^2/depth for sandy soil types*
- *Design Irrigation rate of 15 mm/week for clay soil types or 35 mm/week for sandy soil types.*

(4) A Wastewater Assessment Report is required for applications with more than 6 bedrooms.

(5) Council assesses effluent loading based on two persons for a master bedroom, two persons for a guest room and one person per additional bedroom. A study or any other room that has the potential to be used as a bedroom will be considered as an additional bedroom.

Table 3 Buffer Distances for OSSM Systems

System	Buffer Distances
All OSSM systems (including tank)	• 250 metres to domestic groundwater well • 100 metres to permanent surface waters (e.g. rivers, creeks, streams, lakes etc) • 40 metres to other waters (e.g. dams, stormwater easements, overland flow paths, intermittent waterways and drainage areas etc) • 15 metres from an in-ground water tank • 1 metre from the drip line of native trees and shrubs • For tank – minimum 1.5 metres from dwelling
Surface spray irrigation	• 15 metres to dwellings • 6 metres if area up-slope and 3 metres if area down-slope of buildings, driveways and property boundaries • 3 metres to paths and walkways • 6 metres to swimming pools and recreational areas
Surface drip and trickle irrigation	• 6 metres if area up-slope and 3 metres if area down-slope of dwellings, swimming pools, property boundaries, driveways and buildings
Subsurface irrigation	• 6 metres if area up-slope and 3 metres if area down-slope of dwellings, swimming pools, property boundaries, driveways and buildings
Absorption system	• 12 metres if area up-slope and 6 metres if area down-slope of property boundaries and dwellings • 6 metres if area up-slope and 3 metres if area down-slope of swimming pools, driveways and buildings

***Notes**: (1) Additional buffer distances may be required as identified during Council's assessment of the development proposal.*

2.1.2 Additional Requirements for Aerated Wastewater Treatment Systems (AWTS)

The following requirements need to be considered in conjunction with Section 2.1.1 for all Aerated Wastewater Treatment Systems (AWTS):

- All Effluent Disposal Areas (EDAs) are to be suitably designed and located based on site characteristics and environmental constraints. Appendix C shows an example of an EDA layout for a domestic system.
- The disposal area for the system is to be estimated using the hydraulic and nutrient loading rate of the wastewater, and the resulting disposal area size will depend on the most limiting factor. Both calculation methods should be included in the Wastewater Report. The larger of the two areas must be provided as the minimum EDA.
- AWTS must be inspected and serviced by an experienced service agent in accordance with the NSW Health accreditation. This service must also be carried out according to the manufacturer's instructions. The system owner is responsible for organising service inspections, and the resulting service report must be provided to Council. Refer to Appendix D for further information regarding AWTS service requirements.

***Note**: For the purposes of this policy the provisions for AWTS throughout this document also apply to Biological Filter Systems and Wet Composting Systems (that include an irrigation system) when it can be demonstrated that the quality of the treated effluent is equivalent to that produced by an AWTS.*

2.1.3 Additional Requirements for Absorption Beds, Trenches and Mounds

The following requirements need to be considered in conjunction with Section 2.1.1 for all absorption bed, absorption trench and mound systems:

- The design requirements of the *AS/NZS 1547:2012 On-Site Domestic Wastewater Management* and the *Environment and Health Protection Guidelines – On-Site Sewage Management for Single Households* (the 'Silver Book'), and those considerations stated elsewhere in this policy are to be followed.
- As per AS/NZS 1547:2012, a reserve area that is 100% of the design disposal area shall be made available on a site for the resting of the disposal area, or for the duplication or upgrade of the disposal area if it is required at some future time. The reserve area shall be protected from any development that would prevent it being used in the future.
- Any modifications or alterations to a system may require approval from Council.

2.1.4 Additional Requirements for Pump-out Systems

The following requirements need to be considered in conjunction with Section 2.1.1 for all pump-out systems:

- New pump-out systems are generally not supported, unless it has been demonstrated that there is no other suitable option.
- Effluent must be pumped out at least once a week (unless otherwise approved by Council).
- A suitable service provider is to be engaged to pump out the tank/s and dispose of the waste at a licensed waste facility.
- Owners of pump-out systems (except those systems covered by Council's domestic service) must provide pump-out records to Council as per the conditions of their Operational Approval or on request (including volumes, service provider details, system details and the disposal location).

2.1.5 Commercial Systems

Commercial systems regulated by Council are generally sized between 10EP and 2500EP (EP - equivalent persons). Commercial systems require both installation and operational approvals from Council.

2.1.6 Dual Occupancies and Secondary Dwellings

Each dwelling within a dual occupancy or a secondary dwelling arrangement is to be serviced by its own OSSM system.

If a dual occupancy or secondary dwelling is proposed, the OSSM system must comply with the requirements of Table 2 and Table 3 for each dwelling or a Wastewater Assessment Report is to be provided.

Secondary dwellings may be serviced by an existing OSSM system only where it can be demonstrated to the satisfaction of Council through a Wastewater Assessment Report that the system and the site have the capacity to manage effluent effectively.

In addition, adequate provisions are to be made for any existing system on the site. The site must have sufficient land available for the replacement or alteration of the existing system if it were to fail in the future. Part 2 of this policy will be used to determine whether sufficient land is available.

If a site is unable to provide sufficient land for the future replacement or alterations of the existing system, a Wastewater Report is required to be submitted for the development. This Wastewater Report is to be prepared in accordance with the requirements of this policy and must also provide sufficient assessment and recommendations on the future replacement or alteration of the existing system, taking into account the proposed development.

2.1.7 Flood Liable Land

OSSM systems, including the tank/s and effluent disposal area, are to be installed outside areas of the property affected by mainstream flooding or local overland flow paths in the 1% AEP flood event. The buffer distances of Table 3 also need to be addressed. If an alternative location for the OSSM system cannot be found on the property, a Wastewater Assessment Report is required to be submitted with the application.

The Wastewater Report must assess and consider the effects of the flooding on the proposed system's tank/s and disposal area, and provide mitigation measures to be implemented to minimise the impacts of flooding. Any proposal for the OSSM system should consider the provisions of Section 3.5 Flood Liable Lands in Council's Development Control Plan 2010.

Generally, Council will not support development obstructing overland flow paths. In particular, mound systems are not supported when constructed in an area identified as an overland flow path. Any mounding (including for OSSM systems, stormwater diversion and raised garden beds) in areas affected by mainstream flooding are to address the filling of land below the flood planning level in accordance with Section 3.5 Flood Liable Lands in Council's Development Control Plan 2010.

The electrical and mechanical components of the OSSM system shall be located above the 1% AEP (1:100) flood contour. Where possible, tank/s should be located on flood free land.

If an existing system is to be upgraded on a property that is flood liable, all measures must be taken to protect the system and its components from being affected by flooding.

2.1.8 Subdivision and Rezoning Proposals

The following needs to be considered in relation to subdivision and rezoning proposals:

- A Wastewater Assessment will be required at the subdivision planning stage. Potential OSSM systems and available on-site disposal areas will need to be identified.
- Subdivision proposals that rely on pump-out systems will not be supported. Subdivisions in unsewered areas must be designed to achieve the sustainable management and disposal of wastewater and to prevent impacts on human health and the environment.

- Subdivision proposals in unsewered areas that rely on on-site sewage management must provide minimum lot sizes of 10,000m^2 (1 hectare).
- Developments that include more than one dwelling on an existing unsewered residential lot smaller than 10,000m^2 will not be supported if they rely on pump-out systems.
- Existing unsewered lots in the rural villages will not be rezoned to allow subdivision of lots smaller than 10,000m^2.
- No residential development, other than a single dwelling house, will be permitted in a rural village area if a reticulated sewerage system is not available.

2.2 Operational Approvals

Section 68 of the *Local Government Act 1993* states that Council approval is required to operate a system of sewage management. The following outlines Council's procedures for issuing these approvals:

- New systems will be issued a 3 year approval when installed after a satisfactory final inspection.
- All systems that have previously received a 2 or 5 year approval will have their approval renewed every 3 years under this policy.
- All existing operational approvals need to be renewed prior to their expiry. This new approval will be issued automatically (except for new systems) by Council prior to the expiry date of the current approval.
- Operational approvals will not be renewed when there are known compliance issues associated with the system. All compliance issues must be resolved to the satisfaction of Council prior to the approval being renewed.

2.3 Inspection and Monitoring

The *Local Government Act 1993* gives Council the tools to regulate OSSM systems, including the ability to inspect and monitor these systems. Regulation of OSSM systems will include the following:

- Systems will be inspected as part of an auditing program.
- System inspections will be carried out to investigate complaints.
- System owners and operators are required to comply with the conditions of their Installation and Operational Approvals.
- *Local Government Act* Orders and fines can be issued to ensure compliance with the conditions of approval, and to ensure wastewater is managed appropriately.
- Fines and Notices can also be issued for pollution of water offences under the *Protection of the Environment Operations Act 1997*.
- Orders and fines may also be issued under the *Environmental Planning and Assessment Act 1979* where applicable.
- Notations may also be added to a property (Section 149(5) Certificate) if a system has been installed or is operating without Council approval.

3. Reusing Greywater

3.1 Reusing Greywater

Greywater can be diverted to your garden through a Greywater Diversion Device or a Greywater Treatment System in line with this policy.

Greywater typically includes wastewater from showers, baths, hand basins, laundry tubs and washing machines. Wastewater from the kitchen, dishwashers and spas contains too much fat or is too acidic or alkaline for use with Greywater Diversion Devices. Wastewater from the toilet is too high in bacteria to reuse.

3.2 Greywater Diversion Devices

Greywater Diversion Devices redirect untreated greywater to the garden for reuse by sub-surface irrigation. Greywater Diversion Devices in sewered areas that comply with the following requirements do not require approval from Council.

- The dwelling must not be connected to an on-site wastewater management system.
- All Greywater Diversion Devices must have a WaterMark licence - accreditation from SAI Global.
- The dwelling must not form a part of a townhouse, villa or multi-unit development.
- Greywater is to be applied to the garden by sub-surface irrigation. This will reduce human exposure to the water. Sub-surface is defined as artificial watering of land through buried watering systems. Watering systems are to be no less then 100mm below ground surface.
- Greywater is to be used only during prolonged warm/dry periods, and volumes should be limited to those needed to meet plant water requirements.
- Ensure that the diversion system is ‘fail-safe’, that is greywater will automatically be diverted to the sewer if the greywater system blocks or otherwise malfunctions.
- Divert greywater to sewer during periods of wet weather.
- Do not divert kitchen wastewater, which has a high concentration of contaminants not readily broken down by soil organisms.
- Only divert the lowest risk greywater such as the shower, bath, hand basin and laundry rinse water.
- Never divert greywater that could have gross faecal contamination, for example water used to launder soiled nappies.
- Always wash your hands after gardening. Do not irrigate on vegetable gardens supplying food crops that are eaten raw or undercooked as this could pose an unacceptable health risk.
- Never store untreated greywater for more than 24 hours, as concentrations of contaminants may reach dangerous levels.
- Do not allow greywater to pool or stagnate, as this will attract insects and rodents, which may transmit disease.

- Never allow greywater to discharge beyond property boundaries, as this may create environmental and public health risks.
- Never allow greywater to discharge to a drain or waterway, as it is likely to be harmful to aquatic life and could be considered water pollution.
- Never drink greywater or allow pets or other animals to drink or have access to it.
- Do not allow the soil to become saturated. Carefully monitor the impact of the greywater on the irrigation area in order to minimise the risk of causing pollution.
- The installation of a greywater diversion device is to comply with the Plumbing Code of Australia.
- The device is to be installed by a licensed plumber
- The device is to comply with NSW state guidelines including guidelines and fact sheets produced by NSW Health, Department of Water and Energy (DWE) and NSW Office of Water. For single, detached households (no more than one dwelling), the NSW *Guidelines for Greywater Reuse in Sewer, Single Household Residential Premises* apply.

3.3 Domestic Greywater Treatment Systems

Greywater Treatment Systems are designed to collect, treat and reuse greywater. These systems treat the wastewater to a quality that enables it to be used above ground (spray irrigation). Domestic Greywater Treatment Systems must be accredited by NSW Health and require both installation and operational approval from Council.

It is important to note that although these systems are designed to achieve a level of water quality that is suitable for irrigation, the treated greywater is still not permitted to be reused for activities such as handheld hosing or washing motor vehicles. The reuse of greywater for flushing toilets and laundry uses is only permitted if the system is accredited for that use.

The requirements for installing a Greywater Treatment System are similar to that of an Aerated Wastewater Treatment System. When applying for an installation approval, the information marked in Appendix A will need to be provided with the application form.

3.4 Regulations for Greywater Reuse

The *Local Government Act* regulates installation and operational approvals for Domestic Greywater Treatment Systems and Greywater Diversion Devices. As with all wastewater management systems, it is the operator's responsibility to ensure the system is installed and operating correctly.

There are penalties for failing to operate these systems in an environmentally satisfactory manner. If required Council will use provisions of the following legislation to ensure these systems do not impact on human health or the environment:

- Notices and Orders under the *Local Government Act*.
- Notices under the *Protection of the Environment Operations Act*.
- On-the-spot fines under the above legislation.

4. Connecting to Mains Sewer (Sydney Water)

Mains sewer systems are provided in residential areas to ensure safe collection, treatment and disposal of domestic, commercial and industrial wastewater. Properties located within an area that is serviced by mains sewer are generally required to be connected and dispose of their wastewater through that system.

Existing Sewered Areas
OSSM systems will not be permitted when mains sewer is available and connection is possible.

Newly Sewered Areas
Properties within a newly sewered area will be required to connect to mains sewer within 12 months of the date of commissioning. Properties failing to connect may be directed to connect in accordance with the provisions of the *Local Government Act*. Once connected any existing OSSM system is required to be decommissioned, or alternatively converted to a Greywater Treatment System or Stormwater Tank in accordance with the relevant guidelines as issued by NSW Department of Health.

For both existing and newly sewered areas proposed Greywater Treatment Systems and Greywater Diversion Devices will need to comply with Section 3 of this policy (Reuse of Greywater).

Conversion of an OSSM System in a Newly Sewered Area
It may be possible to convert an OSSM system to a stormwater vessel for the purpose of collecting and reusing stormwater for irrigation. However, conversions may not be appropriate on all sites. Contact Council for further information regarding the relevant requirements and guidelines.

5. Fees and Charges

The *Local Government Act* allows fees and charges to be levied for:

- Applications to install or construct a sewage management system
- Applications to alter a sewage management system
- Applications to operate a sewage management system
- Inspections of sewage management systems

Council has adopted fees and charges for the On-Site Sewage Management Program in its 'Fees and Charges' document. This document forms a part of Council's Operational Plan and is reviewed annually by Council. The fees and charges have been established to recover the costs of resourcing the program, including monitoring and inspecting systems, and administration. Further information on the fee/charge structure is provided in Table 4.

Table 4 Fees/Charges

	Installation	Issue of Approval to Operate	Operational Inspection	Inspection for non-compliance
AWTS	✓	✓	**N/A**	✓
Pump Out	✓	✓	**N/A**	✓
Other Domestic Systems	✓	✓	**N/A**	✓
Commercial / Non-Domestic Systems	✓	✓	✓	✓
Greywater Treatment System	✓	✓	**N/A**	✓
New Property Owners **(where system already installed on property)**	**N/A**	✓	**N/A**	✓

6. Policy Review and Evaluation

Council is committed to the continual improvement of on-site sewage management systems in the City in accordance with best practice. This policy will be reviewed to ensure that it reflects the needs of the community, health and the environment.

Appendices

Appendix A - Information to be provided with an Application to Install an OSSM System or a Domestic Greywater Treatment System

Table A1 Information to be provided with an Application to Install

	Domestic AWTS	Pump Out	Other Domestic OSSM Systems	Commercial	Greywater Treatment System
System design specifications	✓	✓	✓	✓	✓
NSW Accreditation Certificate	✓	✓	✓	**N/A**	✓
Effluent quality data	✓	**N/A**	**N/A**	✓[1]	✓
Monitoring and maintenance schedule (for non-NSW Health accredited systems)	✓	**N/A**	✓	✓	✓
Wastewater Assessment Report (also refer to Appendix B)	✓ Only if minimum requirements cannot be met	✓ Where justification is required	✓	✓	✓
Site Plan (including proposed irrigation area dimensions and methods [2], see Appendix C for an example)	✓	✓	✓	✓	✓
Dwelling / Building floor plan	✓	✓	✓	✓	✓
Effluent Disposal Area Drainage and Landscaping Details	✓	✓	✓	✓	✓
Statement of Environmental Effects [3]	✓	✓	✓	✓	✓

Notes:

1 *Effluent quality data includes data which is derived from long term monitoring and analysis of the treated effluent from the same or similar system to that proposed. At minimum this is to include data on Biological Dissolved Oxygen, Faecal Coliform levels, Total Nitrogen, Total Phosphorus, pH levels, Suspended Solids and Free Chlorine levels. Council maintains the discretion to request further information if required.*

2 *The Site Plan needs to include information regarding the irrigation methods to be used for wastewater disposal. This information is to include the location, dimensions and number of irrigation lines, distribution lines, irrigation zones, standpipes and sprinklers depending on the type of wastewater disposal proposed.*

3 *A Statement of Environmental Effects is only required when the application to install an OSSM system is submitted as part of an application for a new development. An Environmental Impact Statement (EIS) is required to be prepared for a Designated Development application.*

Appendix B – Preparing a Wastewater Assessment Report

The procedures in section 5.2.2.3 of *Australian Standard (AS/NZS 1547:2012) On-Site Domestic Wastewater Management* are to be followed when preparing a Wastewater Assessment Report. In addition, the below requirements need to be considered.

Wastewater load
A wastewater load of 150 litres per person per day is to be used for households with a reticulated water supply. For households with only tank water supply, a wastewater load of 120 litres per person per day is to be applied.

For commercial systems, the wastewater flows in Table B1 need to be applied when calculating the sizing of on-site sewage management systems.

Table B1 Wastewater flow design allowances

Source	Typical wastewater flow allowance in L/person/day [1]	
	On-site roof water tank supply	**Reticulated community or a bore-water supply**
Motels/hotels		
▪ guests, resident staff	120	150
▪ non-resident staff	30	40
▪ reception rooms	20	30
▪ bar trade (per customer)	20	25
▪ restaurant (per diner)	20	30
Community halls		
▪ banqueting	20	35
▪ meetings	10	15
Restaurants (per diner)		
▪ dinner	20	30
▪ lunch	15	25
Tea Rooms (per customer)		
▪ without restroom facilities	10	15
▪ with restroom facilities	15	25
School (pupils plus staff)	30	40
Rural factories, shopping centres	30	50
Camping grounds		
▪ fully serviced	100	130
▪ recreation areas	50	65

Note:
1 These flows are minimum rates unless actual flows from past experience can be demonstrated.

Number of persons
Council assesses effluent loading based on two persons for a master bedroom, two persons for a guest room and one person per additional bedroom. A study or any other room that has the potential to be used as a bedroom will be considered as an additional bedroom.

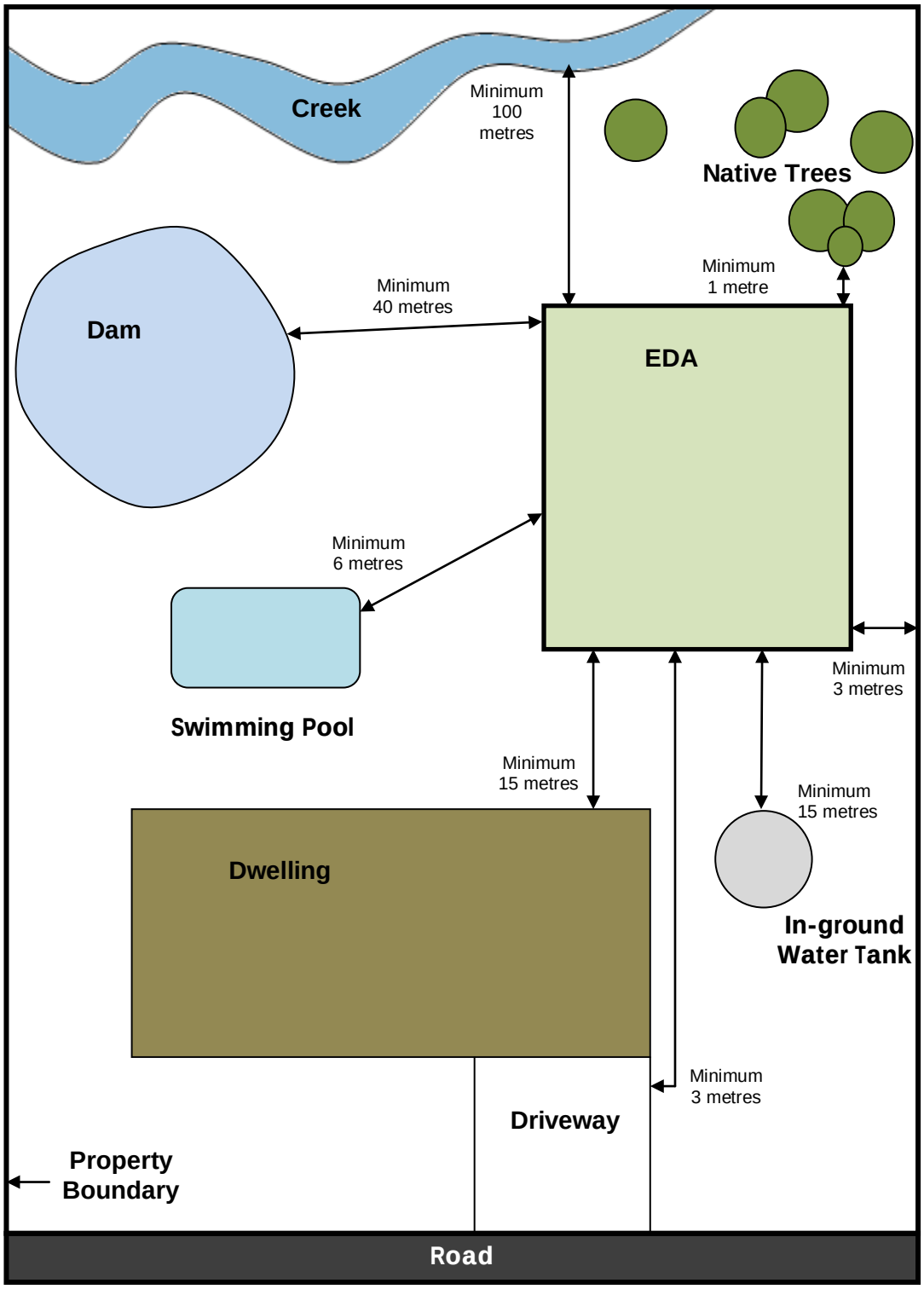
Nutrient uptake
When considering the appropriate critical loading rate for nutrient uptake, details of the vegetation to be used within the disposal area are to be provided along with any maintenance requirements for that vegetation. Where the disposal calculations include nutrient uptake by vegetation, the type of vegetation is to be such that it results in nutrient uptake all year round.

Native vegetation
The potential impact of wastewater on native trees and native vegetation needs to be addressed. Council may require the disposal area to be relocated or the applicant to carry out a Flora and Fauna Assessment to demonstrate that there is no significant impact.

Buffer distances
The Wastewater Assessment Report must give consideration to the buffer distances provided in Table 3 of this policy. The report must provide suitable justification for the buffer distances applied.

Effluent disposal area sizes and location
The Wastewater Assessment Report must provide suitable justification for the sizing and location of the proposed EDA. The site plan is to clearly identify the proposed EDA location on the site, the location of other development (existing and proposed), and show all relevant buffer distances.

Appendix C – Example Layout for an Effluent Disposal Area



The above diagram demonstrates an Effluent Disposal Area (EDA) layout on a level site and is not drawn to scale. All plans submitted to Council are to be drawn to scale and be site specific.

Appendix D - Aerated Wastewater Treatment System Servicing and Reporting Requirements

It is the responsibility of an AWTS system operator to have their system serviced and to provide the service reports to Council.

AWTS must be inspected and serviced by an experienced service agent in accordance with the NSW Health accreditation. Council does not permit property owners or occupiers to undertake this servicing.

1.1 Aerated Wastewater Treatment System Service Agent Requirements

The following requirements apply to service agents:

- Each service agent shall provide a registered business office which, if unattended during business hours, is provided with a telephone answering device or service.
- A means of reporting a system malfunction or breakdown outside normal business hours shall be available.
- In the event of a breakdown or malfunction, the agent shall, within 24 hours of the breakdown or malfunction, ensure that repairs are carried out to the Aerated Wastewater Treatment System to ensure continued operation of the system. This may necessitate provision of adequate spare parts and temporary replacement blowers and irrigation pumps where repairs cannot be completed on site.

1.2 Aerated Wastewater Treatment System Servicing Requirements

The system operator shall enter into a service agreement with the manufacturer, distributor or other person accepted by Penrith City Council to service the aerated septic tank(s) every three (3) months from the date of commissioning (or for a period as required by the NSW Health accreditation).

The three monthly service shall include a check on all mechanical, electrical and functioning parts of the aerated system including:

- the chlorinator
- replenishment of the disinfectant
- the UV disinfection unit (where applicable)
- all pumps and switches
- the air blower, fan or air venturi
- the alarm system
- the effluent disposal area and irrigation spray outlets and/or sub-surface irrigation lines and filters
- the slime growth on the filter media, and
- the operation of the sludge returns system.

On the anniversary date of the commissioning of the system, the service shall also include a check on the sludge accumulation in the septic tank (primary treatment tank) and the clarifier, where appropriate.

The following field tests are to be carried out at every service:

- free residual chlorine using DPD colorimetric or photometric method
- pH from a sample taken from the irrigation chamber
- dissolved oxygen from a sample taken from the final aeration or stilling chamber (recommended but optional).

For systems which use the sewage treatment principle of activated sludge or contact aeration, a sludge bulking test, known as a SV30 Test, shall also be conducted on an annual basis. This test is to determine whether the accumulated sludge is bulking, indicating that the aeration compartment(s) will require de-sludging.

1.3 Aerated Wastewater Treatment System Reporting Requirements

On completion of each service, a legible service report sheet is to specify:

- all service items and test result figures
- detailed description of the condition of the disposal/irrigation area (including all distribution lines, sprinklers and associated plumbing)
- detailed description of any tests and observations undertaken on the disposal/irrigation area (including all distribution lines, sprinklers and associated plumbing)
- amount of chlorine compound provided OR specific actions taken for other forms of disinfection
- date and time the service was conducted, and
- technician's name and contact details.

A copy of the service report is to be:

- given to the system operator and
- provided to Penrith City Council no later than 14 days from the service date.

If Council receives a service report that does not comply with the above requirements, the report may be returned to the system operator or service provider requesting further information or an inspection may be carried out on the system.

Appendix E - Alternative Wastewater Options

There are other types of on-site wastewater management systems in addition to those already covered in this policy. Council will consider applications for these systems based on their merit. For further information about these systems, please see the NSW Health accreditation information available from their website and the Sydney Catchment Management Authority document 'Designing and Installing On-Site Wastewater Systems'.

The requirements of Section 2.1.1 still need to be met for the installation of these systems.

Composting Toilets
Composting toilets can have either a dry or wet composting process. They rely on the principle of aerobic composting or bio degradation of organic matter. They work by providing an enclosed environment for the natural decomposition process which is aided by microorganisms (aerobic bacteria). If properly composted according to the accredited manufacturer's standards, the end product is a nutrient rich fertiliser that can be used on plants thereby reducing the need for commercial fertiliser while also saving water.

Sand Filter System
Sand filter systems generally use a sand bed with a gravel or geotextile base, all protected by an impermeable liner, to filter wastewater. Wastewater from a treatment tank is piped to the filter system, and the wastewater then filters through the sand layer, after which it may be disinfected prior to being piped to a disposal area. Sand filter systems may also be recirculating, and be located above, partially above, or below the ground. The surface is also sometimes mounded to help divert rainwater from the surface of the system.

Mound
A mound system is a soil absorption system which is raised above the natural soil surface. Wastewater from the dwelling is sent to a holding tank (septic or AWTS), and the effluent is then pressure dosed to the mound. Mounds generally use a fill material such as a sand media. Mound systems can overcome many site restrictions including shallow permeable soils over a porous bedrock, permeable soils with a high water table and slowly permeable soils.

Biological Filter Systems
A biological filter system involves the combination of two treatment techniques. The waste is first made to pass through filter beds, and is then also subjected to aerobic decomposition with the aid of biological microorganisms such as worms, beetles, mites and other soil fauna. The treated effluent is then disposed of by sub-surface irrigation or absorption trench.

Appendix F - Definitions

Absorption - Uptake of liquid into soil.

Absorption Bed & Trench System - Subsurface land application systems that rely on the capacity of the soil to accept and transmit the applied hydraulic load.

Aerated Wastewater Treatment System - A wastewater treatment system that uses several processes to treat the wastewater to a satisfactory quality that allows it to be *reused* for irrigation purposes. *For the purposes of this policy the provisions for AWTS throughout this document also apply to Biological Filter Systems and Wet Composting Systems (that include an irrigation system) when it can be demonstrated that the quality of the treated effluent is equivalent to that produced by an AWTS.*

Audit - An official inspection and examination.

Bedroom - A room that has the potential to be used for sleeping, including a study.

Buffer zone - A strip of land that is reserved between a potential source of pollution and an area that must be protected from the pollution.

Catchment - The area from which a stream, river, lake or other body of water receives its water.

Commercial System - An on-site sewage management system that is larger than 10 equivalent persons.

Conservation - The management of natural resources in a way that will benefit present and future generations.

Contamination - The presence of undesirable impurities in a substance.

Degradation - To reduce from a higher to a lower quality.

Designated Development - Development that is described in Schedule 3 of the Environmental Planning and Assessment Regulations.

De-sludging - Withdrawing sludge, scum and liquid from a tank.

Disposal Area - The area to which effluent is conveyed for disposal, such as an absorption trench or irrigation area.

Domestic Greywater Treatment System - A system that collects, treats and disinfects greywater generated by a household, for one or more of the following end uses: toilet and urinal flushing, washing machine, and surface or sub-surface irrigation.

Domestic Wastewater - Wastewater arising from household activities, including wastewater from bathrooms, kitchens, and laundries.

Drip Line - A line around a plant directly under its outermost branch tips. Roots seldom grow beyond the drip line.

Dual Occupancy - Two dwellings on one lot of land that are either attached or detached, but does not include a secondary dwelling.

Effluent - Any waste products (treated or untreated) from any process or human activity that is discharged into the environment.

Effluent Disposal Area (EDA) - A suitably sized area which is designed to effectively manage the disposal of wastewater.

Environmentally Sensitive Area - Are rivers, riparian land, escarpments and other scenic areas, conservation area sub-catchments, national parks and nature reserves, wetlands, other significant flora and fauna habitats and corridors, and known and potential acid sulphate soils. (As identified in Sydney Regional Environmental Plan 20 – Hawkesbury-Nepean River.)

Evaporation - When a liquid turns to vapour.

Existing OSSM System - Means a system installed and operating prior to the adoption of this policy.

Flood Liable Land - land susceptible to affectation by mainstream flooding or local overland flow paths.

Greywater - Domestic wastewater excluding toilet waste and may include wastewater arising from a hand basin, kitchen, bath, shower and laundry.

Greywater Diversion Device - A device that diverts greywater generated by a household for sub-surface irrigation reuse.

Greywater Treatment System - Systems that are designed to collect, treat and reuse greywater.

Groundwater - All underground waters.

Impermeable - Water is unable to move through the material.

In-ground Water Tank - a tank that has any part situated below the ground surface.

Intermittent Waterway - A waterway that is not permanent, and may be influenced by rainfall.

Land Application Area - The area over which treated wastewater is applied.

Local Overland Flow - local runoff from sub-catchments rather than overbank discharge from a stream, creek, river, estuary, lake or dam.

Mains Sewer - Mains sewer is a centralised sewerage system. In Penrith City, mains sewer is operated by Sydney Water.

Mound System - A soil absorption system which is raised above the natural soil surface. Wastewater from the dwelling is sent to a holding tank (septic or AWTS), and the effluent is then pressure dosed to the mound.

New OSSM System - A proposed system for installation and operation.

Nutrients - A substance that is essential for plant or animal growth, such as nitrogen and phosphorous.

Operational Approval Renewal Inspection - An inspection undertaken prior to an operational approval expiring for the purpose of issuing another operational approval.

Permanent Surface Water - A body of water that is present at all times. Includes, but is not limited to, rivers, creeks, streams and lakes.

Permeability - The general term used to describe the rate of water through a substance.

Pump-out System - Systems that include a collection well that receives effluent from a septic tank that is frequently pumped out and removed from the property by a licensed contractor.

Residual - Substance that remains after the rest has been taken.

Secondary Dwelling - A self-contained dwelling that is established in conjunction with another dwelling (the principal dwelling), and is on the same lot of land as the principal dwelling, and is also located within, or is attached to, or is separate from, the principal dwelling. The total area of the secondary dwelling must not exceed the greater of 60 square metres or 11% of the total floor area of the principal dwelling. Eg. Granny Flat.

Seepage - The gradual flow of groundwater to the surface over a wide area, but not as from a spring.

Sewage - Waste matter that passes through sewers.

Sub-surface Irrigation - Artificial watering of land through buried watering systems. Watering system is to be no less then 100mm below ground surface.

Surface Irrigation - Artificial watering of land through an above ground system.

Surface Water - Any water (usually as a result of rainfall) that enters drainage areas, creeks, rivers and reservoirs such as dams and lakes.

Unsewered - Not connected to a reticulated sewerage system.

Wastewater - Water that carries wastes from residential, industrial or commercial premises. Water that has been contaminated by some activity. Includes greywater and sewage.

Wastewater Assessment Report - A detailed assessment prepared by a suitably qualified consultant that applies relevant standards and guidelines to determine the suitability of the proposed system and disposal method.

Waterlogging - Becoming saturated with water.