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1. **TITLE**

The title of this Strategy is: “Bathurst Regional Council – On-site Sewage Management Strategy.”

2. **BACKGROUND**

In March 1998 the NSW Minister for Local Government introduced The Local Government (Approvals) Amendment (Sewage Management) Regulation 1998 and the Environment and Health Protection Guidelines in response to studies conducted in NSW which indicated both a failure rate of up to 70% of on-site sewage management systems, and an enormous potential for unsatisfactory cumulative impacts on the environment and on public health arising from the previous ad-hoc management strategies/methods. The above-mentioned Regulation has since undergone review and the relevant legislation is now contained within the Local Government (General) Regulation 2005.

Both Bathurst Regional Council (Council) and Landholders have responsibilities in relation to the installation and operation of on-site sewage management systems to ensure protection of public health and the environment.

It is estimated that there are more than 2800 on-site sewage management systems in operation in the Bathurst LGA. All on-site sewage management systems should be registered with Council and have a current approval. However it is recognised that historically the management of such systems has not been a high priority for Council and that there have been insufficient staff resources to effectively manage these systems in a strategic manner.

3. **APPLICATION OF THIS STRATEGY**

This Strategy applies to:

- all land within the Bathurst Local Government Area (LGA) not provided with reticulated sewerage infrastructure;
- all existing and proposed installations of on-site sewage management systems on residential premises;
- all Development Applications for new or amended/altered works on land not provided with reticulated sewerage infrastructure;

This strategy is principally aimed at outlining the relevant guidelines for single residential premises. Dual occupancies may be subject to conditions differing from those detailed in this strategy and will be assessed on a case by case basis. It is acknowledged that commercial and industrial premises require a different approach to residential installations, and therefore will be addressed in a separate strategy.

4. **OBJECTIVES**

The objectives of this Strategy are to ensure that on-site sewage management systems in the Bathurst Local Government Area are installed and operated in a manner that ensures the following:

a) prevention of risks to public health;
b) protection of surface and groundwater from pollution;
c) protection of soils and surrounding environment from pollution and degradation;
d) protection of community amenity by not producing odours or attracting vectors of disease;

Further this strategy aims to:

a) set the minimum standards for the design, installation and maintenance of on-site sewage management system
b) outline the processes related to monitoring and inspection of on-site sewage management systems in the Bathurst LGA.

5. RELATIONSHIP TO OTHER DOCUMENTS

In the event that the relevant Legislation, Guidelines or Australian Standards are revised post the adoption of this Strategy, the revised documents are to replace the repealed documents specified in this Strategy.

The following sections outline the legislative framework for the approval and monitoring of on-site sewage management systems in NSW.

5.1 THE LOCAL GOVERNMENT ACT 1993

The Local Government (General) Regulation 2005 (under section 68 of The Local Government Act 1993 - Approvals):

a) specifies requirements for the design, installation, alteration and operation of domestic on-site sewage management systems, under s. 68 and s.68A of the Act, and allows fees to be charged under s. 608;
b) specifies information required to accompany an application to operate, install or alter an on-site sewage management system;
c) clarifies accreditation roles and responsibilities of the NSW Health Department;
d) describes minimum performance criteria for the installation and operation of on-site sewage management systems;
e) prescribes where public health or the environment are at risk an Order under Section 124 of the Act may be issued depending on the situation, including Orders - 21, 22, 24, 25, 30 or an Emergency Order (which may be issued where public health or the environment is at risk);
f) provides that following the expiration of an Order, a Penalty Infringement Notice (PIN) under the Act may be issued depending on circumstances;

5.2 PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997 (POEO ACT)

The Act provides local government with powers to investigate and issue notices. Councils are the Appropriate Regulatory Authority (ARA) for activities relating to on-site sewage management facilities (excluding Scheduled Premises). Where an on-site sewage management facility is detected to be failing the following actions are available to Council under the POEO Act:

a) Clean Up Notices - are quick responses to pollution incidents. These notices incur an administration fee (fees are listed in Council’s Revenue Policy)
b) Prevention Notices - can be issued where an on-site sewage management facility is operating in an environmentally unsatisfactory manner. These notices incur an administration fee (fees are listed in Council’s Revenue Policy)
c) PIN under the Act may be issued
Any enforcement action undertaken by Council will be guided by the procedures outlined in Council’s Enforcement Policy. At all times Council aims to work with landholders to ensure the safe and efficient management of on-site sewage management systems. However some circumstances may require Council to utilise powers under the LG Act or POEO Act.

5.3 The Environment and Health Protection Guidelines for On-site Sewage Management for Single Households

These Guidelines, which are called up in the regulations and dually empowered by the application of the regulations recommend that Councils should:

a) develop, implement and regularly review a Sewage Management Strategy;
b) consider all issues relating to approving the installation and operation of on-site sewage management facilities, particularly environment and health issues;
c) develop conditions of Approval to Operate for systems of on-site sewage management and specific sites;
d) undertake ongoing community education programs; and
e) implement a long-term program of inspections to monitor the performance and impact of on-site sewage management facilities on the wider environment.

5.4 Australian/New Zealand Standards

The following standards must be adhered to in the application of this policy:

- AS/NZS 1547:2000 On-Site Domestic-Wastewater Management
- AS/NZS 1546:1998 On-Site Domestic Wastewater Treatment Units
  Part 1: Septic tanks.
  Part 2: Waterless composting toilets.
  Part 3: Aerated wastewater treatment systems.
- AS/NZS 3500 Plumbing and Drainage.

5.5 Council Policies

This strategy must be read with reference to the following Council policies:

- Greywater Reuse Policy
- Trade Waste Policy
- Enforcement Policy
- Revenue Policy

6. Types of On-Site Sewage Management Systems

The on-site sewage management system utilised on a premises may include one or more of the following elements:

- Septic tank and absorption trenches
- Septic tank and evapo-transpiration areas
- Septic tank and sand filters
- Aerated wastewater treatment systems (AWTS)
- Septic tank and collection well (pump-out system)
- Dry composting toilets
• Wet composting toilets and subsurface application systems
• Septic tank and constructed wetlands
• Septic tank and soil mound systems
• Sand filters
• Peat Biofilters
• or any other system designed to treat and dispose of sewage

Greywater treatment and re-use systems are defined as a system of sewage management by the LG Act. These systems must comply with Council’s Greywater Reuse Policy and are not discussed further in this strategy. Pump-out systems are not considered to be a viable on-site waste management technique and as such will be considered as the last option and generally on existing sites where existing site constraints or environmental or health risks preclude other options.

Section 41 of the Local Government (General) Regulation 2005 requires that Council will not approve the installation or construction of a sewage management facility unless the council is satisfied that the facility is to be installed or constructed to a design or plan that is the subject of a certificate of accreditation from the NSW Health, being a certificate that is in force.

The most suitable system for a particular site will be dependent on a wide range of criteria which are outlined in subsequent sections of this strategy.

7. APPROVAL PROCESS FOR THE INSTALLATION, CONSTRUCTION OR ALTERATION OF AN ON-SITE SEWAGE MANAGEMENT SYSTEM

Prior to the installation, construction or alteration of an on-site sewage management system (or an addition to an on-site sewage management system), the landowner must make an application to Council. An application shall be made on the prescribed form, and accompanied by any associated fees as prescribed in Council’s Revenue Policy. The application must be accompanied by the following:

7.1 SITE LAYOUT PLAN

The application must be accompanied by a plan (drawn to scale with accurate dimensions), showing:

a) the location of the sewage management system proposed to be installed or constructed on the premises including accurate measurements to all buildings and structures, boundaries, natural features including dams, waterways, creeklines, drainage depressions (located both within and external to the property, within the range of the required buffer distances), and native vegetation; and

b) the precise location of any related effluent application areas and its relationship to all of those features listed above; and

c) a plan detailing how even distribution of wastewater is to be achieved within the disposal area(s); and

d) any buildings or facilities existing on, any land located within 100 metres of the sewage management facility or effluent application areas; and

e) location of any proposed structures that will impact on the performance of the irrigation or disposal system e.g. swimming pools, tennis courts, large sheds; and

f) the location of any environmentally sensitive areas of any land located within 100 metres of the sewage management system or effluent application areas; and

g) any related drainage lines or pipework (whether natural or constructed); and
h) slope of the site (or contours at 0.5m (RL) intervals across the site where requested by Council); and
i) all related buffer distances

7.2 SPECIFICATIONS

The application must be accompanied by a copy of the full NSW Health accredited specifications of the sewage management facility proposed to be installed or constructed on the premises together with specifications of the proposed effluent application system(s).

7.3 WASTEWATER/GEOTECHNICAL REPORT

A geo-technical study is to be submitted with the “application to install a septic tank” to determine the suitability of the site with respect to the on-site disposal of effluent.

(a) This study is to be carried out by an experienced geo-technical engineering consultant, with associated testing being conducted by a NATA registered laboratory. Matters such as geology, stratigraphy (in particular soil profile and permeability) must be addressed.
(b) The study must also state whether or not the proposed dwelling and the proposed effluent disposal area are located in a position and are of a design and capacity to ensure that all effluent arising from the dwelling can be disposed of on the site without causing nuisances and/or pollution, both in the short and the long term.
(c) The study must reference compliance with AS/NZS 1547:2000 and the Environment and Health Protection Guidelines – On-site sewage management for single households.
(d) The final location of the dwelling on the land may be determined by the findings and recommendations of the required geo-technical study. The location of the dwelling should therefore not be finalised until the results of the geo-technical study are known.

7.4 OPERATION AND MAINTENANCE. (REQUIRED FOR AWTS)

The applicant is required to provide, in writing to Council prior to installation of the approved system the following details:

a) the operation and maintenance requirements for the proposed sewage management facility; and
b) the proposed operation, maintenance and servicing arrangements intended to meet those requirements; and
(c) the action to be taken in the event of a breakdown in, or other interference with, its operation.
(d) Quarterly services must be undertaken and a copy of the service report provided to Council.

7.5 EXISTING SYSTEMS

Existing installations shall be subject to the same requirements as for new system installations where an owner chooses to alter or construct a system or where an alteration or modification is required due to inspections carried out by the Council, proposed alterations to the site or unsatisfactory performance of the system.
8. PERFORMANCE CRITERIA

The Council must consider performance criteria when determining applications for Approval to Install, construct, alter or operate on-site sewage management facilities. The Local Government (General) Regulation 2005 (S.44(1)) specifies minimum objectives, which are listed below:

a) the prevention of the spread of disease by micro-organisms;
b) the prevention of the spread of foul odours;
c) the prevention of the contamination of water;
d) the prevention of the degradation of soil and vegetation;
e) the discouragement of insects and vermin;
f) ensuring that persons do not come into contact with untreated sewage or effluent in the ordinary activities on the premises concerned;
g) the minimisation of adverse impacts on the amenity of the premises and surrounding lands; and
h) if appropriate, provision for the reuse of resources including nutrients, organic matter and water.

8.1 DESIGN WASTEWATER FLOW ALLOWANCES

To ensure adequate treatment capacity of the proposed treatment system the following design wastewater flow allowances are to apply, unless otherwise stated by Council.

i. Residential development number of people (equivalent persons) the design daily flow calculations shall be based on the maximum occupancy of the dwelling, being the number of bedrooms plus two. Council maintains the discretion to classify other rooms that have the potential to be used as sleeping rooms as bedrooms.

ii. Proposals that incorporate extra wastewater producing facilities: The Australian / New Zealand Standard 1547:2000 On-site Domestic Wastewater Management stipulates that any household with extra wastewater producing facilities shall be based on a wastewater flow allowance of 220 litres per person per day (for reticulated water supply).

8.2 BUFFER DISTANCES

It is recommended that all land application systems maintain the following buffer distances as a minimum:

- 100 metres to permanent water surface waters (eg. river, streams, lakes, etc)
- 250 metres to a domestic groundwater well
- 40 metres to other waters (eg. farm dams, intermittent waterways and drainage channels)

In addition, surface spray irrigation systems (eg AWTS) are recommended to maintain the following buffer distances:

- 6 metres if up-gradient and 3 metres if down-gradient of driveways and property boundaries
- 15 metres to a dwelling
- 3 metres to paths and walkways
- 6 metres to swimming pools
Surface drip and trickle irrigation systems and sub-surface irrigation systems are recommended to maintain the following buffer distances:

- 6 metres if up-gradient and 3 metres if down-gradient of swimming pools, property boundaries, driveways and buildings

Absorption systems are recommended to maintain the following buffer distances:

- 12 metres if up-gradient and 6 metres if down-gradient of property boundaries
- 6 metres if up-gradient and 3 metres if down-gradient of swimming pools, driveways and buildings

Greater buffer distances may be required at Council’s discretion. Council will consider applications which do not meet the recommended buffer distances on their individual merits. However, such applications may be subject to additional conditions and will attract a “high” risk rating.

8.3 CLIMATIC CONDITIONS

All applications should consider the average climatic conditions for the Bathurst LGA as reported by the Bureau of Meteorology.

9. ASSESSMENT PROCESS

It is the responsibility of the applicant to ensure that all required information is supplied to Council with the completed application form. Council staff are available provide assistance and advice in ensuring that the application is complete prior to submission.

The application will be assessed and the applicant will be notified in writing of the determination, that is the application has been:

a) **Approved** subject to conditions of consent and amendments where required, or
b) **Refused** with an explanation if it is established that the proposal would not provide a satisfactory level of human health protection and environmental well being.

An applicant or their contractor must not commence work on the installation of a system of on-site sewage management without **prior written Approval** from Council.

10. OPERATION AND MAINTENANCE OF AN ON-SITE SEWAGE MANAGEMENT SYSTEM

At the completion of an installation, construction or alteration of an on-site sewage management system, the system is not permitted to be operated until such time as Council has issued an Approval to Operate a Sewage Management System. This will only be issued once the system has been installed, constructed or altered in accordance with the approval as issued by the Council.

If Council finds that a condition of the Approval to Operate has not been complied with, Council may modify or revoke the approval, or require remedial works to be undertaken to ensure compliance.

10.1 RESPONSIBILITY OF THE OWNER OR OCCUPIER
It is the responsibility of the homeowner / occupier to ensure that the on-site sewage management system on their property is maintained and operated in a manner which does not pose any risk to public health and or the environment. The owner and or occupier should be aware of the operation and maintenance requirements for their system and must ensure that the necessary service contracts are in place. The owner or occupier should notify Council if their on-site sewage management system is failing and prior to arranging the necessary repairs or replacement of the system in compliance with Council requirements. Written approval must be obtained from Council prior to commencing any modifications or alterations to the system.

10.2 Maintenance of Septic Tanks

Septic tanks shall be desludged as required by an authorised human waste removal service. Desludging is required when:

a) the scum layer is within 100mm of the bottom of the inlet square junction, or the sludge layer is within 200mm of the bottom of the outlet square junction,
b) the sludge occupies the basic allowance (1550L) of the septic tank, or
c) the total depth of sludge and scum is equal to one third of the depth of the tank.

The desludging procedure should ensure:

1. That sufficient water is introduced into the tank after desludging to prevent the tank from being lifted by soil hydrostatic pressure.
2. Caution shall be taken during the desludging process to protect the facility the collapse or displacement of internal compartments or components.

10.3 AWTS Maintenance and Service Technicians

All AWTS’s require servicing and maintenance at 3-monthly intervals (or at intervals as specified in the NSW Department of Health Accreditation for the system).

a) Therefore:

(i) the owner must enter into an Annual Service Contract with a Service Agent
(ii) The service agent is required to check or test all of the mechanical, electrical and functioning parts of the AWTS including:
  • the tank and connecting drainage is adequate;
  • electrical circuitry is adequate;
  • electrical wiring protected and satisfactorily installed;
  • the chlorinator (where installed);
  • UV lamp cleaned (where installed);
  • replenishment or replacement of disinfection agent (i.e. chlorine tablets, UV globe);
  • all pumps tested;
  • air blowers, fans or air venturi tested;
  • an alarm/buzzer or warning light test;
  • the effluent irrigation area is satisfactory;
  • the installed irrigation lines and sprinklers are satisfactory;
  • sludge and scum levels within the primary chambers, to determine if the system requires pump-out or no scum at all;
  • bacterial growth on all filter media;
  • the operation of the sludge return system;
  • Residual chlorine amounts;
b) At the completion of a service a report sheet should be completed and a copy must be provided to Council after each service.

10.4 GENERAL MAINTENANCE CONSIDERATIONS

When an on-site sewage management facility is:

(i) due to be serviced;
(ii) in need of repair;
(iii) requiring replacement;
(iv) to be installed;
(v) to be altered, modified or attended to in terms of operational adjustment;

All works may only be carried out by a person who is a qualified service technician or licensed tradesperson where required. Written approval must be obtained from Council prior to commencing any alterations or modifications to the system. Any replacement work must comply with the manufacturers specifications and the NSW Health Accreditation for the system.

10.5 MAINTENANCE OF DISPOSAL AREA

It is the responsibility of the owner or occupier to ensure that the disposal area is maintained. Maintenance should ensure that:

- Grassed areas are regularly mowed and all lawn clippings removed
- Grazing animals are not permitted to enter the area
- Warning signs are in place if surface irrigation is used
- Sprinklers are operational at all times if surface irrigation is used
- All vehicular traffic is excluded
- Standard household taps and garden fittings are not suitable for use as irrigation equipment. All irrigation pipework and fittings must comply with AS-2698 Plastic Pipes and fittings for irrigation and rural applications

11. MONITORING AND INSPECTION REGIME

In order to ensure that existing systems meet the performance objectives of this strategy Council must develop a long term monitoring and inspection regime for the entire LGA.

11.1 RISK RATING

All on-site sewage management systems in the Bathurst LGA will be assigned a risk rating. Four categories are proposed:

- High risk
- Medium risk
- Low risk
- Exempt
The property/system is assigned the appropriate risk if it satisfies one or more criteria. In the case where the property may fall within two categories the higher risk category will prevail.

11.1.1 High risk criteria

- Area of property is less than 1.0Ha
- Less than 100m from a waterway or less than 40m from a dam
- Disposal area is less than 12m from an uphill boundary
- Disposal area is less than 6m from a downhill boundary
- Slope is greater than 20% (or 1 in 5)
- Nearest bore or well used for domestic water supply is less than 200m
- No stormwater diversion is in place
- Uses/proposes surface disposal eg AWTS
- Proposes to use composting or reed beds or constructed wetlands for disposal
- Located in the Ben Chifley Dam catchment area
- Proximity to human activity* of disposal area is less than 6m if uphill
- Proximity to human activity of disposal area is less than 3m if downhill
- Potable water supply is reticulated town water
- Topographical position is in an overland flow path
- Property is within 1% AEP flood zone
- Property is other than a single domestic dwelling
- Surface water is present in disposal area
- Soil erosion is present in or near disposal area

*human activity includes recreational lawn areas, children’s play areas, vegetable gardens or fruit trees.

11.1.2 Medium risk criteria

- Area of property is 1.0 to 4.0Ha
- Disposal area is between 100m and 200m from a waterway
- Disposal area is greater than 12m from an uphill boundary
- Disposal area is greater than 6m from a downhill boundary
- Slope is less than 20% (or 1 in 5) but more than 10% (1 in 10)
- Nearest bore or well used for domestic water supply is greater than 200m but less than 300m
- Stormwater is partially diverted from the disposal area and all on-site sewage management infrastructure
- Uses sub-surface disposal but no geotechnical report has been provided (for existing systems)
- Proximity to human activity of disposal area is between 6m and 20m
- Potable water supply is bore or dam water
- Topographical position is not in an overland flow path
- Property is outside 1% AEP flood zone
- Property is infrequently used (eg low load system servicing a sports facility)
- Surface water is not present in disposal area
- Soil erosion is not present in or near disposal area

11.1.3 Low Risk Systems

- Area of property is 4.0 to 10.0Ha
• Disposal area is greater than 200m from a waterway
• Disposal area is greater than 12m from an uphill boundary
• Disposal area is greater than 6m from a downhill boundary
• Slope is less than 10% (1 in 10)
• Nearest bore or well used for domestic water supply is greater than 300m
• Stormwater is fully diverted from the disposal area and all on-site sewage management infrastructure
• Uses sub-surface disposal and an approved geotechnical report has been provided (for existing and proposed systems)
• Proximity to human activity of disposal area is greater than 20m
• Potable water supply is rainwater tanks only
• Topographical position is not in an overland flow path
• Property is outside 1% AEP flood zone
• Property is a single private dwelling
• Surface water is not present in disposal area
• Soil erosion is not present in or near disposal area

11.1.4 Exempt systems

• Area of property is greater than 10Ha
• System approved and installed less than three years prior to time when routine inspections are occurring in area
• No complaints have been received by Council regarding operation and management of the system
• Property is not in Ben Chifley Dam catchment

11.2 Inspection Regime

Existing installations, which during the course of inspections carried out by Council, are found to be functioning in a manner that meets the performance criteria and not requiring alteration, will be given a risk classification. This classification will be made in relation to the performance of the unit, the condition of the unit, possible impacts on public health, water quality, soils, native flora and community amenity.

Council will aim to undertake the following inspection frequency, dependent on available resources:

• High risk system – reinspection every two (2) years
• Medium risk systems – reinspection every four (4) years
• Low risk systems – reinspection every six (6) or more years
• Exempt systems – no inspections

Additional inspections may be carried out at Councils discretion. The approval will specify the performance objectives of the Regulation and provide a mechanism for accountability to the Council concerning compliance with basic requirements (conditions) aimed at the protection of public health and the environment.

A system which has met all operational and approval conditions on two (2) consecutive inspections may be granted a lower risk rating at the discretion of Council. A newly installed system is temporarily classified as exempt until it has been in operation for more than three years, at which time a low, medium or high risk rating will be applied.
Upon reinspection the landholder will be required to make an application for renewal of their approval to operate and pay the associated fees in accordance with Council’s Revenue Policy.

11.3 FAILING SYSTEMS

Where an on-site sewage management system is found to be functioning in a manner which Council deems to be unsatisfactory and is a risk to either or both the environment and or public health, Council will take appropriate action under relevant legislation to ensure that the issues with the system are rectified and to ensure that the system is operating in a satisfactory manner. This action is irrespective of whether or not the system is being operated under a current Approval to Operate. If this is the case Council holds the authority to revoke the Approval to Operate.

11.4 COMPLAINTS ABOUT FAILING SYSTEMS

A member of the community who has a problem with the operation of an on-site sewage management system is entitled to approach Council about the concern. Council will investigate complaints relating to system failures irrespective of the priority area. The inspection may replace the next scheduled inspection for any system that is the subject of a complaint. Changes may be made to the risk category of systems as a result of any investigation.

12. FEES & CHARGES

Council charges fees for both inspections and the issue of an approval to operate as detailed in its Revenue Policy. These fees cover some of the costs associated with the implementation of the program. The fees for inspections and the approval have been determined in accordance with Section 608 regulatory fees the Local Government Act 1993. Council’s Revenue Policy is reviewed on an annual basis.

13. DEFINITIONS (all definitions taken from Camden Shire Council On-site Sewage Management Strategy)

Absorption The absorption and/or uptake of effluent into the soil by capillary action.
AEP Annual Exceedance Probability – The chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage, for example, a 1% AEP flood has a 1 in 100 chance of happening each and every year.
Aerated wastewater treatment facility (AWTS) A wastewater treatment process typically involving:
• Settling of solids and flotation of scum
• Oxidation and consumption of organic matter through aeration
• Clarification - secondary settling of solids, and
• Disinfection of wastewater before surface irrigation.
Aerobic Dissolved or free oxygen is present in the wastewater
Anaerobic Dissolved or free oxygen is not present in the wastewater
Anaerobic digestion Decomposition of sludge in the absence of free oxygen
Approval to Install For the Installation, construction or alteration of an on-site sewage management system, written approval to install, construct or alter a sewage management system must be obtained from Council prior to any works being undertaken.
Approval to Operate Approval required from Council to operate a system of sewage management. Operate a system of sewage management means to hold or process, or re-use or discharge, sewage or by-products of sewage (whether or not the sewage is generated on the premises on which the system of sewage management is operated)
Biochemical oxygen demand (BOD5) A measure of the dissolved oxygen required for the breakdown of organic material in the effluent; usually refers to a 5-day test (BOD5), expressed in milligrams per litre (mg/L)

Blackwater Human excreta and water grossly contaminated with human excreta, for example, toilet wastewater (although not strictly water-based, human excreta entering waterless composting toilets is considered as ‘blackwater’)

Buffer Distance The distance that a wastewater treatment system must be situated from any habitable building, boundary, driveway, path, recreational facility, watercourse, body of water, environmentally sensitive area or other feature as specified by Council.

Compost The material produced by the Aerobic biological decomposition of the organic Constituents of a material in which the original material cannot be identified and the composting process is complete.

Constructed wetland Constructed area where the water surface is near ground level for enough of the year to maintain saturated soil conditions and promotes related vegetation

Council For the purpose of this Strategy refers to Bathurst Regional Council

Denitrification Transformation of nitrate into the gaseous NO and N forms; denitrification is an anaerobic process carried out by micro-organisms; it can occur only if the soil becomes oxygen deficient (for example, as a result of waterlogging)

Desludging Removal of accumulated sludge and scum from the septic tank by a licensed contractor

Disinfection A process that destroys, inactivates or removes pathogenic micro-organisms

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

Drain Drain for the carrying off of waters other than sewage

Effluent The liquid discharged from a wastewater-treatment unit

Environmentally sensitive area includes any land or area:
(i) within 100 metres of a natural waterbody, wetland or coastal dune field, or
(ii) with a high watertable, or
(iii) with highly permeable soils or acid sulphate, sodic or saline soils, or
(iv) within a drinking water catchment, or

Equivalent population (EP) A measure typically used in the design of wastewater management systems. As there are differences in wastewater generation rates between premises with and without reticulated water supplies, and premises with dry composting toilet technologies, it is usually easier to stipulate design limits by an 'equivalent' number of people rather than the total flow

Evapo-transpiration Removing water from soil by evaporation and from plants by transpiration

Faecal coliforms (or thermotolerant coliforms) A type of bacteria that live only in the gut of warm-blooded animals. Can be detected in the general environment if that environment is contaminated with human excreta, and therefore can act as an indicator of recent faecal contamination

Greywater The domestic wastes from baths, showers, basins and laundries, specifically excluding water closets and urinal wastes. Greywater does not normally contain human waste unless laundry tubs or basins are used to rinse soiled clothing or babies napkins

Groundwater All underground waters

Holding Tank A tank used for holding wastewater prior to pumping out to a disposal area or removal by a authorised waste service (sometimes called a Collection Well)

Human Waste Means human faeces and urine (from the Local Government Act 1993)

Human waste storage facility (HWSF) Device for holding or disposing of human waste, including a cesspit, chemical closet and pan toilet

Human waste treatment device (HWTD) Device for treating human excreta and other Wastewater, including a septic tank, aerated wastewater treatment system, septic closet, water closet, humus closet and combustion closet

Hydraulic loading rate (hydraulic load, hydraulic loading) The amount of liquid applied to land over a specified time interval. Can be expressed as either a depth or a volume (with one millimetre of application equal to one litre per square metre)

Nitrification Transformation of inorganic ammonium (NH4+) into nitrate (NO3-)
**Nutrients** Chemical elements that are essential for sustained plant or animal growth; the major nutrients essential for plant growth are nitrogen, phosphorus and potassium; in excess, nitrogen and phosphorus are potentially serious pollutants encouraging nuisance growths of algae and aquatic plants in waters and (in the case of nitrate) posing a direct human health risk

**On-site Sewage Management System** A system that stores and treats wastewater on-site (does not include the REAA)

**On-site Sewage Management Facility** A system that stores, treats and disposes of wastewater incorporating both the tanks and related disposal area

**Operate an on-site sewage management facility** To hold, process, or reuse or otherwise dispose of sewage or by products of sewage

**Organic matter** Material consisting of chemical compounds based upon carbon skeletons (proteins, carbohydrates and fats); may be present in dissolved, suspended and colloidal form; it is usually measured as BOD in a liquid

**Pathogens** Micro-organisms that are potentially disease-causing; these include but are not limited to bacteria, protozoa and viruses

**Percolation** The descent of water through the soil profile

**Permeability** The general term used to describe the rate of water movement through a soil

**pH** A measure of hydrogen ion concentration. It is an indicator of acidity or alkalinity and ranges from 0 - 14, where 0 is the most acid, 14 the most alkaline, and 7 neutral

**Potable** Water of a quality suitable for drinking and domestic use that does not deteriorate on storage and that does not contain pathogenic organisms

**Precipitation** Deposits of water, either in liquid or solid form that reach the earth from the atmosphere

**Primary Treatment** The separation of suspended material from wastewater by settlement and/or flotation in a septic tank prior to the effluent discharge to either a secondary treatment process or to a land application area

**Pump-out** A septic system where all accumulated wastewater is removed from site by an authorised waste service

**Regulatory Authority** An authority that is empowered by statute to be responsible for managing or controlling an aspect of on-site domestic-wastewater systems

**Residual chlorine** Chlorine remaining in solution after a specified period of contact between the solution and the chlorine

**Reticulated water supply** The provision by a water authority of water for potable and non-potable uses to households through a network of pipes

**Run-off** The part of the precipitation and/or irrigated effluent that becomes surface flow because it is not immediately absorbed into or detained on the soil

**Run-on** Surface water flowing on to an irrigation area as a result of run-off occurring higher up the slope

**Sanitary plumbing system** An assembly of pipes, fittings, fixtures and appliances used to collect wastewater from household drains and convey it to the sanitary drainage system

**Scum** The floating material that collects at the top of primary wastewater treatment tanks, including Oils, grease, soaps and plastics

**Secondary Treatment** Aerobic biological processing and settling or filtering of effluent received from a primary treatment unit. Effluent quality following secondary treatment is expected to be equal to or better than 20mg/L 5-day Biochemical oxygen demand and 30mg/L suspended solids

**Septic tank** A single or multiple chambered tank through which wastewater is allowed to flow slowly to permit suspended matter to settle and be retained, so that organic matter retained therein can be decomposed (digested) by anaerobic bacterial action in the liquid. The term covers tanks used to treat all-waste, greywater or blackwater

**Sewage** Waste matter that passes through sewers. Sewage includes any effluent of a kind referred to in the definition of waste

**Sewerage** The network of collection drains carrying domestic wastewater or effluent away from properties for off-site treatment

**Sewage management** Any activity carried out for the purpose of holding or processing, or reusing or otherwise disposing of, sewage or by-products of sewage

**Sewage management facility** Includes a human waste storage facility, or a waste treatment device intended to process sewage, and includes a drain connected to such a facility or device
Sludge  The semi-liquid solids settled from wastewater

Soil absorption system  (includes leach drains, drain fields, absorption trenches, seepage beds and seepage pits) sub-surface land application systems that rely on the capacity of the soil to accept and transmit the applied hydraulic load

Suspended solids (SS)  In wastewater analysis: solids retained after filtration through a glass fibre filter paper followed by washing and drying at 105°C, or by centrifuging followed by washing and removal of the supernatant liquid; expressed in milligrams per litre (mg/L)

Treated wastewater  Wastewater that has received treatment via a human waste treatment device

Vectors  Insects or animals, such as flies, mosquitos or rodents, that are attracted to the putrescible organic material in wastewater and wastewater treatment systems, and that spread disease

Wastewater  The used water arising from domestic activities in dwellings, institutions or commercial facilities consisting of all-waste, greywater or blackwater

Waterless composting toilet  Waterless system that uses the principle of composting to break down human excreta to a humus-type material. The liquid fraction is evaporated or directed to an appropriate management system

Wet composting toilet  Treats all household wastewater and putrescible household organic solid wastes such as food waste. Uses the principle of aerobic composting to break down the solid waste; the liquid component is directed to a land application system after passing through the pile of solids

14. REFERENCES

Standards Australia / Standards New Zealand 1996, AS 2700S
  Colour Standards for General Purposes

Standards Australia / Standards New Zealand 2000, AS/NZS 1547:2000
  On-site Domestic Wastewater management. Australia/New Zealand Standard

Standards Australia / Standards New Zealand 2003, AS/NZS 2698
  Plastic Pipes & Fittings for Irrigation & Rural Application

Standards Australia / Standards New Zealand 2003, AS/NZS 3500
  Plumbing and Drainage

Hawkesbury City Council On-site Sewage Management Strategy (2007)
Ballina Shire Council On-site Sewage and Wastewater Management Strategy (2008)

15. REVIEW OF POLICY

Council seeks feed back from the public on ways to improve the policy and make it easier to understand.

Please address your comments in writing to:

The General Manager
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Private Mail Bag 17
BATHURST NSW 2795