



ON-SITE SEWAGE MANAGEMENT STANDARD

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On-site Sewage Management Standard

DIRECTORATE: City Economy & Growth

BUSINESS UNIT: Community Standards

1 PURPOSE/ OBJECTIVES

1.1 The purpose of this Standard is to:

- Provide guidance for the management, approval and regulation of On-site Sewage Management Systems (OSMS) in the Liverpool LGA as outlined in the Local Government Act 1993 and Local Government (General) Regulation 2005.
- Provide a framework to ensure an “Approval to Operate” is issued for all OSMS where appropriate.
- Outline the risk categories and inspection frequency for OSMS.
- Provide acceptable standards and guidance for the installation, operation and decommissioning of domestic and commercial OSMS.
- Outline the requirements for the installation and upgrade of new OSMS.
- Encourage the connection to Sydney Water’s reticulated sewerage service where available and outline when connection is required.
- Facilitate orderly and sustainable development and pave the way for infrastructure by reducing reliance on OSMS.

1.2 The objectives of this Standard are to:

- Protect public health: OSMS must be installed, operated and maintained to ensure that they do not cause a risk to public health or adversely impact on amenity.
- Protect the environment: OSMS must be installed, operated and maintained in a manner which is both economically and environmentally sustainable and must not cause the degradation of land.
- Protect waters: OSMS must be installed, operated and maintained to ensure surface waters and groundwater are not contaminated by any flow from either the system or associated effluent disposal areas.
- Ensure sustainable growth: OSMS pose inherent risks to the health of the public, the environment and waterways. Wastewater generated by both

existing and proposed land uses must be directed to Sydney Water's reticulated sewerage service wherever possible to help eliminate these risks.

2 SCOPE

This Standard applies to:

- Proposed and existing domestic and commercial OSMS.
- Proposed and existing greywater reuse systems.
- Unsewered properties.
- Pump-to-sewer systems.
- Development applications involving any of the above.

3 DEFINITIONS

Refer to Appendix 1.

4 STANDARD STATEMENT

4.1 Introduction

The Liverpool City Council local government area is undergoing significant growth as land-use zones change to reflect the needs of Sydney's growing population. Greenfield areas are being developed resulting in an increase of urbanisation and providing greater access to Sydney Water's reticulated sewerage service. Despite the growth, significant areas of the Liverpool LGA continue to rely on on-site sewage management systems (OSMS).

An OSMS is a miniature sewage treatment plant which requires on-going maintenance to ensure it remains fully operational. If it is misused, overworked or poorly maintained it will likely fail and pose a risk to public health and the environment.

This Standard has been developed to provide a framework for the design, approval, regulation, and management of domestic and commercial OSMS within the Liverpool City Council local government area (LGA). It also addresses the provisions of the [Local Government \(General\) Regulation 2005](#) which requires OSMS operators to obtain approval for the operation of the OSMS under [Section 68](#) of the [Local Government Act 1993](#).

4.2 Legislation and Guidelines

To ensure public health and safety is maintained and to minimise the risk to the environment, certain pieces of legislation make it an offence to misuse, mismanage or wilfully cause a risk to human health and the environment. To ensure compliance with this legislation, standards and guidelines have been created to aid in the design, management, and installation of these systems.

Legislation, Australian Standards, and guidelines are continually evolving and those listed hereunder may be revised after the adoption of this Standard. In such cases, the revised documents are to take precedence over the superseded documents specified in this Standard.

Accordingly, this Standard is to be read in conjunction with;

4.2.1 The [Local Government Act 1993](#) and The [Local Government \(General\) Regulation 2005](#).

This legislation:

- specifies requirements for the design, installation, alteration and operation of OSMS, under s.68 and s.68A of the Act, and allows fees
- to be charged under s.608;
- specifies information required to accompany an application to operate,
- install or alter an OSMS;
- clarifies accreditation roles and responsibilities of the NSW Health Department;
- describes minimum performance criteria for the installation and operation of OSMS;
- 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; and
- provides that following the expiration of an Order, a Penalty Infringement Notice (PIN) under the Act may be issued depending on circumstances;

4.2.2 Protection of The Environment Operations Act 1997 ([POEO Act](#))

The POEO Act provides local government with increased powers to investigate and issue notices where OSMS are causing, or are likely to cause pollution of land, pollution of water or pollution of air.

Where an on-site sewage management facility is found to be failing or likely to fail, the following actions are available to Council under the POEO Act:

- Clean Up Notices - can be issued verbally or in writing as a quick response to a pollution incident.
- Prevention Notices - can be issued where an OSMS is operating in an environmentally unsatisfactory manner (see definitions in Appendix) or is failing or is likely to fail.

NOTE: The above notices incur an administration fee which is set by the [Regulations](#).

4.2.3 The Department of Local Government Environment 1998 - Environment & Health Protection Guidelines - On-site Sewage Management for Single Households

These Guidelines recommend that Councils should:

- develop, implement and regularly review a Sewage Management Strategy;
- consider all issues relating to approving the installation and operation of OSMS, particularly environment and health issues;
- develop conditions of Approval to Operate for OSMS;
- undertake ongoing community education programs; and
- implement a long-term sustainable program of OSMS inspections to monitor the performance and impact of OSMS on the wider environment.

4.2.4 Australian/New Zealand Standards

AS/NZS 1547:2012 On-Site Domestic-Wastewater Management

This standard provides specific details for the assessment, design, sizing, construction and operation of domestic OSMS and associated effluent disposal areas. It also provides sample schematics for a range of typical effluent disposal methods.

This standard provides guidance relating to:

- site investigations, including risk assessment for site constraints;
- effluent disposal area sizing and design; and
- OSMS installation, operation and maintenance to achieve sustainable outcomes and public health performance.

AS/NZS 1546.1:2008 On-site Domestic Wastewater Treatment Units Septic Tanks

AS/NZS 1546.2:2008 On-Site Domestic Wastewater Treatment Units Waterless Composting Toilets

AS/NZS 1546.3:2017 On-Site Domestic Wastewater Treatment Units Secondary Treatment Systems

AS/NZS 1546.4:2016 On-Site Domestic Wastewater Treatment Units Domestic Greywater Treatment Systems

These standards provide specific details for the design of domestic Septic Tanks, Waterless Composting Toilets, Secondary Treatment Units and Greywater Treatment Systems.

AS/NZS 3500.2:2018 Plumbing and Drainage Part 2: Sanitary plumbing and drainage

This covers the requirements for the design and installation of sanitary plumbing and drainage. It is relevant to licensed plumbers, drainers and installers who conduct repairs, alterations or installations OSMS.

4.3 Unsewered Areas

The Liverpool City Council local government area is undergoing significant growth as land-use zones change to reflect the needs of Sydney's growing population. Greenfield areas are being developed resulting in an increase of urbanisation and providing greater access to Sydney Water's reticulated sewerage service.

Despite the growth, significant areas of the Liverpool LGA continue to rely on OSMS. Figure 1 on the following page broadly outlines the areas where OSMS are prevalent. It must be noted that some properties within established sewerage areas may still rely on an OSMS and Council may not be aware of this.

Due to the prevalence of OSMS within the Liverpool Council LGA, it is advised that any potential property purchasers or developers investigate whether a property is connected to Sydney Water's reticulated sewerage system or otherwise. Where a property is serviced by an OSMS, this Standard should be read in detail to gain an understanding of the constraints that an OSMS can impose on a property and the requirement to connect to Sydney Water's reticulated sewerage system where possible (see section 4.4).

4.4 Connection to Reticulated Sewer

Council's priority is to work with the NSW State Government, planning authorities, Sydney Water and developers to provide the necessary infrastructure to facilitate properties to be connected to Sydney Water's reticulated sewerage system.

Development proposals relying on OSMS will not be considered where a viable connection to a reticulated sewerage service is available within 75m of any property boundary. Developments which must rely on OSMS will only be considered for approval under the condition that a connection to a reticulated sewerage service is established when it becomes available.

All properties which rely on on-site sewage management will be required to establish a connection to a reticulated sewerage service when a viable connection becomes available within 75m of any property boundary. When the property is connected to a reticulated sewerage service and the system has been decommissioned (see section 4.35), the property owner is required to notify Council and provide evidence of connection. Evidence of connection should be either a certificate of connection from the plumber undertaking the works or correspondence from Sydney Water confirming the connection.

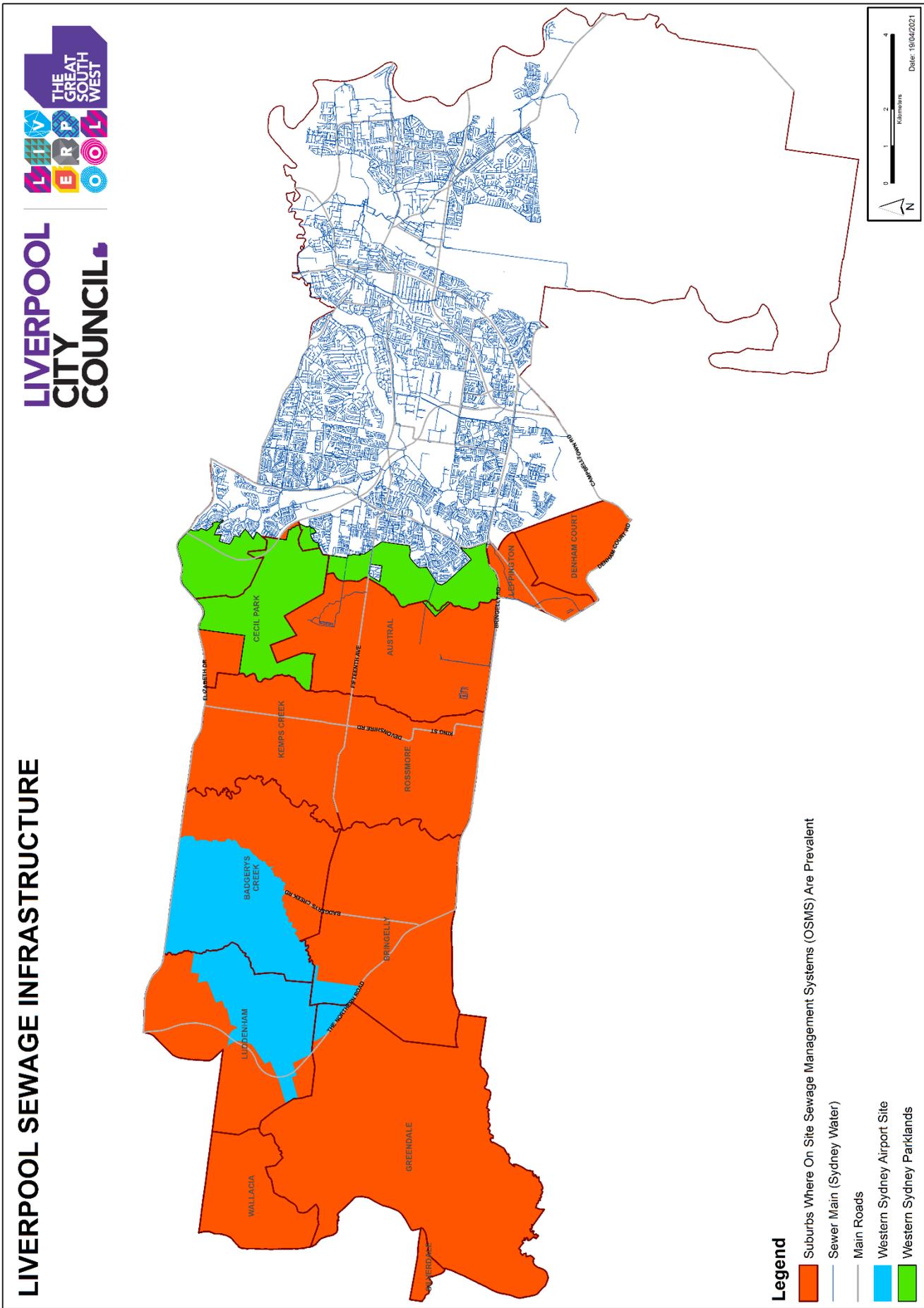


Figure 1: Map of Liverpool local government area showing sewer mains and areas where OSMS are prevalent.

4.5 Risk Categories

Council's OSMS database categorises all systems into one of four risk categories, low, medium, high and commercial. An OSMS is categorised initially upon completion of the installation, however the category may be modified at any time based on new information or changes to a property or system. All domestic systems fall into either the low, medium or high risk categories.

All systems that service a commercial operation, whether combined with a domestic use or not, are categorised as commercial.

The following list outlines the typical risk factors when considering what category is applied to domestic systems. It should be noted that an OSMS must meet all listed factors to be considered low risk, while a system may be considered medium or high risk if only one of the listed risk factors are present.

4.5.1 Low Risk

- All required buffer distances for the effluent disposal area and OSMS tanks are easily achieved (see section 4.20).
- The property has more than 2000m² of available effluent disposal area when all buffer distances for spray irrigation are considered.
- The effluent disposal area and OSMS tanks are not impacted by flood affected land.
- An aerated wastewater treatment system is in use with effluent disposal via spray, sub-surface or drip irrigation.
- The aerated wastewater treatment system is regularly maintained and has been serviced quarterly since installation.
- Council has no record of system failure, effluent disposal area failure or inappropriate use of effluent.

4.5.2 Medium risk

- All required buffer distances for the effluent disposal area and OSMS tanks are achieved.
- The property has between 1200m² – 2000m² of available effluent disposal area when all buffer distances for spray irrigation are considered.
- The effluent disposal area and OSMS tanks are not impacted by flood affected land.
- An aerated wastewater treatment system is in use with effluent disposal via spray, sub-surface or drip irrigation.

- The aerated wastewater treatment system is regularly maintained and has been serviced quarterly since installation.
- Council records show that any identified issues with the system or effluent disposal area have been minor in nature and rectified as soon as practical.

4.5.3 High risk

- Some of the required buffer distances for the effluent disposal area and/or OSMS tanks cannot be achieved. Emphasis is placed on the required buffer distance to waterways and property boundaries.
- The property has less than 1200m² of available effluent disposal area when all buffer distances for spray irrigation are considered.
- The effluent disposal area or OSMS tanks may be impacted by flood affected land.
- An aerated wastewater treatment system (AWTS) is in use with effluent disposal methods other than spray and subsurface irrigation (i.e. pressure dosed beds, mounds, absorption trenches etc.).
- A septic tank or other form of approved OSMS (other than an AWTS) is in use with any suitable form of effluent disposal.
- A pump-out system is in use (existing systems only, new pump-out system installations are not permitted).
- Council has a record of system failure, failure to service an aerated wastewater treatment system, effluent disposal area failure or inappropriate use of effluent.

4.5.4 Commercial – High risk

The system services a commercial operation, whether combined with a domestic use or not. For example, systems servicing;

- Childcare centres
- Schools
- Places of worship
- Clubs
- Community halls
- Industrial premises
- Any other commercial activity

4.6 Inspection Standard

Approximately 3000 properties within the Liverpool LGA are serviced by OSMS. In order to minimise the risk to public health and the environment, Council has formulated an inspection strategy to ensure that the highest risk systems are frequently inspected. This targeted approach allows Council officers to ensure these systems are appropriately operated and maintained, while also being able to quickly respond to community concerns or complaints relating to domestic systems.

Commercial OSMS will be inspected on an annual basis, or more frequently as required. Council will also respond to complaints received regarding commercial OSMS and may inspect if it has been brought to Council's attention that the system is or may be failing.

Domestic OSMS will be inspected where Council receives a complaint or where Council officers suspect that a system does not meet the requirements of this Standard or the performance standards outlined in the Local Government (General) Regulation 2005.

4.7 Performance Standards

During an inspection of an OSMS, Council will assess the system against the following Performance Standards outlined in clause 44 of the [Local Government \(General\) Regulation 2005](#):

- a) the prevention of the spread of disease by micro-organisms;*
- b) the prevention of the spread of foul odours;*
- c) the prevention of contamination of water;*
- d) the prevention of 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 (whether treated or not) in their ordinary activities on the premises concerned;*
- g) the minimisation of any adverse impacts on the amenity of the premises and surrounding lands; and*
- h) if appropriate, provision for the re-use of resources (including nutrients, organic matter and water).*

An inspection will result in failure if the OSMS or associated effluent disposal area does not meet the above performance standards, is found to be operating in an unsatisfactory manner, does not meet the conditions outlined in its of Approval to Operate, has not been recently/regularly serviced, or is considered to pose a risk to public health or the environment. Council will take appropriate action under

relevant legislation to ensure that issues identified with the OSMS or effluent disposal area are rectified in a timely manner (see section 4.2 for relevant legislation). Council may revoke the Approval to Operate an OSMS where an inspection results in failure.

An extract from Council's inspection report can be found in Attachment 1 of this Standard. This is provided to give an indication of some of the factors considered by Council, however it must be noted that the report does not list all possible issues and is an evolving document which will change over time.

4.8 Approval to Install, Construct or Alter an OSMS

An application under [Section 68 of the Local Government Act 1993](#), is required to be submitted to Council for the installation of all proposed OSMS, including alterations to existing OSMS.

Council will consider all applications based on the merits of the proposed system and the potential impact of the proposed system on human health and the environment.

Compliance with the provisions of the Standard does not necessarily imply that Council will approve an application. Council will consider the merit of each individual application with regard to the particular site constraints as well as the type and volume of wastewater generated.

Where a new or modified OSMS is proposed, an application shall be made online via Council's e-planning portal or via the submission of the Section 68 application form titled 'Install / Construct / Alter an On-site Sewage Management / Grey Water Re-use System Application Form'. Council's e-planning portal and the application form can both be found on Council's website; www.liverpool.nsw.gov.au.

4.8.1 Submission requirements

All applications for Approval to Install, Construct or Alter a Sewage Management System will require the payment of the associated fees (see section 4.27) and must be accompanied by the documents specified below:

- Detailed plans and specifications of the proposed OSMS;
- A valid Certificate of accreditation for the proposed OSMS where applicable (large or commercial systems may not fall within the accreditation scheme); and
- A wastewater report which considers all potential wastewater flows on the property including all proposed and existing flows.

4.9 Requirements for Wastewater Reports

Wastewater reports shall consider all potential wastewater flows on the property including all proposed and existing flows, shall be prepared by a suitably qualified and experienced person and include the following information as a minimum.

Plan

The report shall include a plan, to scale, imposed on recent aerial photography of the site, showing the location of:

- The sewage management facility proposed to be installed or constructed on the premises;
- Any related effluent disposal areas and reserve effluent disposal areas;
- Any buildings or facilities existing on, and any environmentally sensitive areas of, any land located within 100 metres of the sewage management facility or related effluent application areas; and
- Any related site features, drainage lines or pipework (whether natural or constructed).

Specifications

The report shall include full specifications of the sewage management facility proposed to be installed or constructed on the premises concerned.

Site assessment

The report shall include details of the climate, geology, hydrogeology, topography, soil composition and vegetation of any related effluent disposal areas together with an assessment of the site in the light of those details.

Statement

The report shall include a statement of:

- The maximum expected number of persons to reside on the premises (see section 4.10 & 4.15); and
- All existing and/or proposed wastewater flows and any other factors relevant to the capacity of the proposed sewage management facility (i.e. commercial activities or other relevant land uses).

Operation and maintenance

The report shall include details of:

- The operation and maintenance requirements for the proposed sewage management facility, including any required alarm systems;

- The proposed operation, maintenance and servicing arrangements intended to meet those requirements; and
- The action to be taken in the event of a breakdown in, or other interference with, its operation.

Standards and guidelines

The report shall demonstrate that a system can be installed in accordance with the requirements of this Standard and the recommendations of the following documents:

- [Local Government \(General\) Regulation 2005](#);
- Australian/New Zealand Standard 1547:2012, On-site Domestic Wastewater Management, or any updated standard which supersedes AS1547:2012;
- Sydney Catchment Authority 2012, Designing and Installing On-site Wastewater Systems;
- NSW Health 2001, Septic Tank and Collection Well Accreditation Guideline;
- Department of Local Government 1998, On-site Sewage Management for Single Households;
- Any other relevant guideline documents adopted by Council after the issue of this Standard.

4.10 Design wastewater flow rates – domestic

The design wastewater flow for domestic OSMS shall be calculated based on the following:

- Two people per bedroom for the first three bedrooms; and
- One person for each additional bedroom.

NOTE: Rooms with a window and a closable door which are easily converted into a bedroom without the need for structural modification are to be included in this calculation e.g. studies, sewing rooms and other rooms of a similar size and location to a typical bedroom.

The daily wastewater flow volume shall be calculated at the following rate:

- 150L per person when serviced by a reticulated water supply.
- 120L per person when serviced by on-site rainwater tanks.

Example: The design wastewater flow rate for a five bedroom equivalent dwelling (four bedrooms and one study) serviced by a reticulated water supply shall be 1200L per day based on the following;

- Two people per bedroom for the first three bedrooms = 6 people
- One person for each additional bedroom, including the study = 2 people
- 150L per person for a total of 8 people = 1200L per day.

Where the design wastewater flow is calculated for multiple dwellings on any property, each dwelling shall be considered separately.

Example: The design wastewater flow rate for a five bedroom equivalent dwelling (four bedrooms and one study) and a two bedroom granny flat serviced by a reticulated water supply shall be 1800L per day based on the following;

Primary dwelling;

- Two people per bedroom for the first three bedrooms = 6 people
- One person for each additional bedroom, including the study = 2 people
- 150L per person for a total of 8 people = 1200L per day.

Granny Flat;

- Two people per bedroom = 4 people
- 150L per person for a total of 4 people = 600L per day

4.11 Increasing wastewater flows with existing systems

When a proposed development increases the potential wastewater flow on an existing property, the treatment capacity of the existing system must be reviewed. A wastewater report will be required to detail the capacity of the existing or proposed system and propose a new or modified effluent irrigation area.

Where an existing OSMS has adequate treatment capacity for all potential flows it may continue to be used. If the existing OSMS does not have adequate treatment capacity for all potential flows a new system must be installed. Section 4.12 of this Standard details what is considered to be adequate treatment capacity.

Where a new OSMS is proposed in addition to an existing OSMS within the same property, the wastewater report shall demonstrate that the existing OSMS and associated effluent disposal area meet current standards and can continue to operate un-altered. Where an existing effluent disposal area does not meet current standards, the wastewater report must detail a proposed upgrade of the area to bring it up to current standards. This upgraded area may be implemented as

approved by Council or may be held as a reserve area to be left undeveloped. The area may only be held as a reserve where Council has deemed the existing area to be meeting the required performance standards outlined in section 4.7 of this Standard.

4.12 Adequate Treatment Capacity for OSMS

For an aerated wastewater treatment system to be considered to have adequate treatment capacity, the wastewater flow must not exceed 75% of the treatment capacity of the system. E.g. for a system with a treatment capacity of 2000L per day, the wastewater flow must not exceed 1500L per day. Note: treatment capacity is the volume an OSMS is designed, tested and/or accredited to treat per day, it is not the total capacity of the OSMS.

The objective of this requirement is to ensure that OSMS have adequate capacity to treat wastewater when flows are greater than anticipated (e.g. parties, events, extended guests etc.). This requirement may not be appropriate to apply to large commercial systems which rely on specialised system design and flow rate calculations. In such a case, it must be demonstrated that the system has/will have adequate capacity to treat wastewater when the anticipated flow rates are exceeded.

4.13 Requirements for secondary treated effluent irrigation systems

This section details additional requirements for the design of effluent disposal areas which rely on the effluent disposal methods such as; spray irrigation, drip irrigation, subsurface irrigation, low pressure effluent distribution (LPED) and other similar irrigation methods:

- Detailed site-specific soil assessment must be provided for all soil layers to a depth of at least 1200mm with at least 2 samples taken within the proposed effluent disposal area. All soil properties shall be described in accordance with Appendix E of AS1547:2012. Due to the critical importance of accurate soil assessment, Council may require consultants to demonstrate how soils were assessed and/or have the assessment peer reviewed;
- Design irrigation rates shall be based off the most restrictive soil type within 600mm of the proposed point of effluent application;
- Site specific nutrient balance, hydraulic balance and water balance calculations shall be conducted and detailed in the wastewater report. The report shall clearly show all figures used in calculations and detail which industry recognised guidelines/standards the methodologies and figures were derived from. The largest calculated irrigation area shall be proposed as the minimum effluent disposal area; and
- Wooded areas which limit solar exposure or could lead to root infiltration of sub-surface irrigation systems are not considered appropriate for effluent disposal.

4.14 Requirements for effluent absorption/evapotranspiration systems

This section details additional requirements for the design of effluent disposal areas which rely on effluent absorption or evapotranspiration methods such as absorption trenches/beds (pressure dosed or gravity fed), mound systems, evapotranspiration beds etc.:

- Detailed site-specific soil assessment must be provided for all soil layers to a depth of at least 1200mm with at least 2 samples taken within the proposed effluent disposal area. All soil properties shall be described in accordance with Appendix E of AS1547:2012. Due to the critical importance of accurate soil assessment, Council may require consultants to demonstrate how soils were assessed and/or have the assessment peer reviewed;
- Design loading rates shall be based off the most restrictive soil type within 600mm of the proposed point of effluent application;
- Effluent disposal area sizing calculations shall be conducted in accordance with AS1547:2012 with design loading rates determined by the most restrictive soil type within the soil absorption zone;
- Both the proposed effluent disposal area and an equally sized reserve effluent disposal area shall be shown on the site plans within the wastewater report. Both effluent disposal areas shall meet all required buffer distances and be protected from any development that would prevent them being used; and
- Wooded areas which limit solar exposure or could lead to root infiltration of absorption/evapotranspiration systems are not considered appropriate for effluent disposal.

4.15 Requirements for commercial systems

This section details additional requirements for the design of commercial OSMS and related effluent disposal areas:

- Depending on the type of system proposed, the relevant section for effluent irrigation systems (section 4.13) and/or effluent absorption/evapotranspiration systems (section 4.14) shall be followed;
- Wastewater flow rates must be designed considering the maximum potential capacity of the proposed commercial use and be derived from either recognised standards or guidelines or water usage data;
- Wastewater flow rates derived from recognised standards or guidelines must include a clear reference to the section of the standard or guideline used. Detailed justification for the use of the flow rate shall be included and must demonstrate that the rate is a conservative assessment;

- Wastewater flow rates derived from water usage data collected from the same or a similar operation must be based off the maximum recorded daily flow rate collected over a minimum of 12 months. The maximum daily flow rate is to be multiplied by a minimum factor of 1.333 to allow for additional capacity within the effluent disposal area.
- The proposed OSMS shall have adequate treatment capacity as described in section 4.12 of this Standard; and
- Any substances used in the commercial activity which are not typically found in domestic wastewater such as chemicals, animal waste, liquid production wastes and the like, shall be listed in the wastewater report. The report shall detail how these substances will be disposed of and provide clear recommendations to ensure that harmful substances will not be disposed in the proposed OSMS. Where such a substance is proposed to be treated in the proposed OSMS, a written statement from the system manufacturer certifying that the substance will not impact on the systems performance shall be provided.

4.16 Requirements for pump-out systems

Pump-out systems are not considered to be economically or environmentally sustainable systems due to the high costs associated with the removal of effluent. This high cost of operating pump-out systems encourages the discharge of effluent into the environment. The installation of pump-out systems or development / subdivision proposals relying on these systems are not supported by Council.

4.17 Requirements for rural residential subdivision

Where subdivision of land is proposed, all lots must be connected to Sydney Water's reticulated sewerage service where it is available within 75m of any property boundary.

For subdivision of land where the resulting lots are proposed to be serviced by OSMS, a wastewater report must be submitted to support the application.

The wastewater report shall provide a site plan for each proposed lot which includes the following:

- A potential dwelling footprint sized to represent a large single storey dwelling with at least 6 bedrooms;
- If a secondary dwelling will be permissible on the lot - an additional potential dwelling footprint to represent a large single storey secondary dwelling;
- Driveway access for each potential dwelling footprint; and
- An available effluent disposal area of at least 1200m² per permissible dwelling. Each proposed effluent disposal area shall meet the minimum

setback distances for surface spray irrigation listed in section 4.20 of this Standard and meet all requirements for effluent irrigation systems listed in section 4.13 of this Standard.

Example: Figure 2 shows an example subdivision plan demonstrating the required effluent disposal areas on each lot.

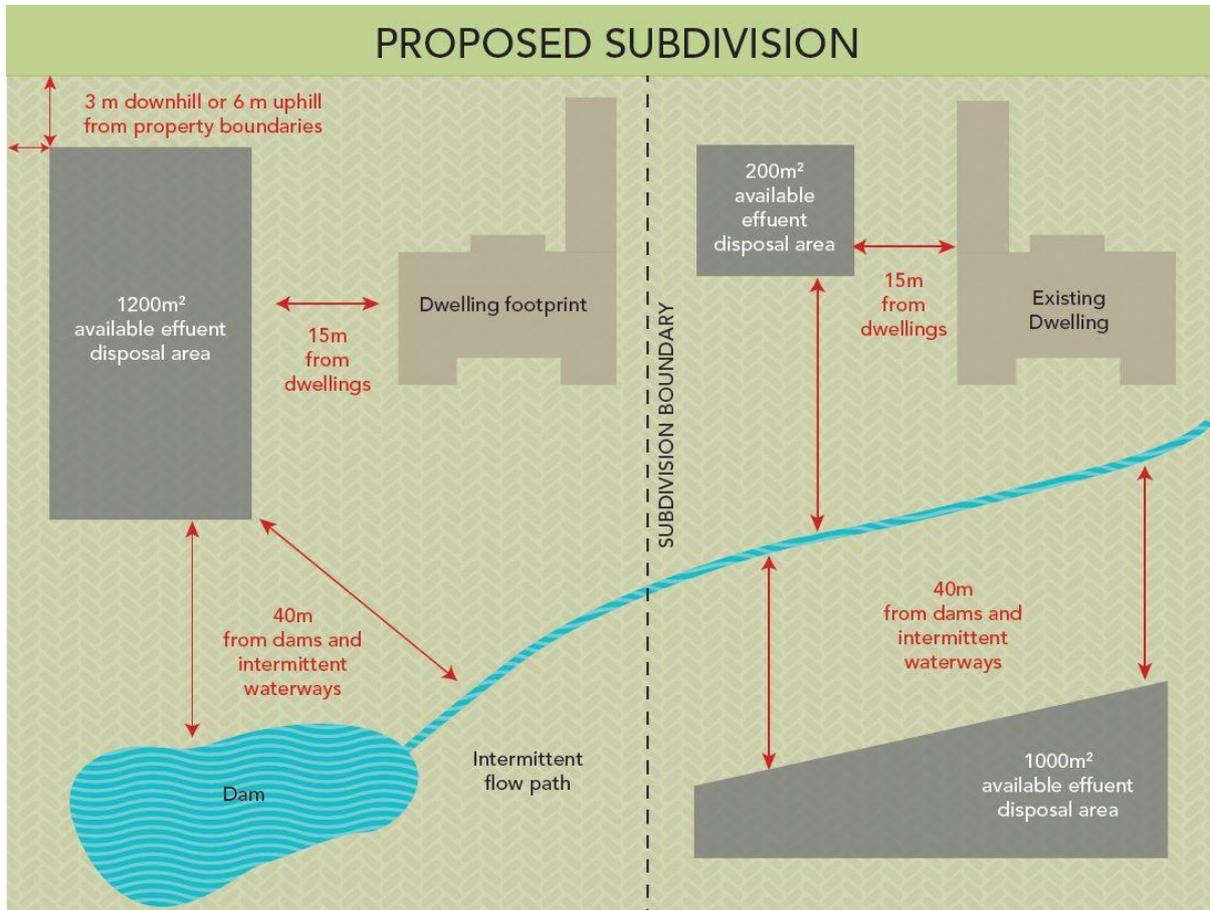


Figure 2: Example of a proposed subdivision with a total of 1200m² of available effluent disposal area demonstrated on each lot.

4.18 Residential subdivision with temporary OSMS

This section applies to subdivision of land where the resulting lots are proposed to be connected to Sydney Water's reticulated sewerage service and existing dwelling(s) are proposed to be retained.

The applicant shall submit a statement which details how wastewater from the retained dwelling(s) will be managed. The following list of wastewater servicing options are in order of priority with option 1 being the most favourable option and option 5 being the least favourable option. The submitted statement shall detail why the chosen wastewater servicing option is proposed and why the more favourable options cannot be achieved.

Option 1 - Connect the retained dwelling(s) to Sydney Water's reticulated sewerage service prior to subdivision works.

Option 2 - Demonstrate that current OSMS and associated effluent disposal areas servicing the retained dwelling(s) will not be impacted by the proposed subdivision and can meet all requirements of this Standard, including the required buffer distances. This may also include staging of the subdivision whereby the effluent disposal area is subdivided at a later stage of the development after a connection to Sydney Water's reticulated sewerage service is established

Option 3 - Demolish, rather than the retained the dwelling(s) prior to subdivision works.

Option 4 - Vacate the retained dwelling(s) prior to subdivision works and render it/them uninhabitable until connected to Sydney Water's reticulated sewerage service.

Option 5 - Install or alter an OSMS as a temporary arrangement to servicing the retained dwelling(s).

Where either Option 2 or 5 of the above list is proposed, a wastewater report shall be submitted demonstrating that the current or proposed OSMS and associated effluent disposal areas meet all requirements of this Standard. OSMS tanks and associated effluent disposal areas must be contained within the proposed lot in which the effluent is generated, temporary easements for effluent disposal on another lot will not be considered.

The retained dwelling(s) must be connected to Sydney Water's reticulated sewerage service when it becomes available within 75m of any property boundary. The temporary OSMS and associated effluent disposal areas must be decommissioned at the time of connection in accordance with section 4.35 of this Standard.

4.19 OSMS location requirements

All tanks associated with an OSMS must be located:

- With a minimum buffer distance of 1.5m from any building;
- On the same property that the wastewater is generated;
- With a minimum buffer distance of 3m from any property boundary;
- Outside of any overland flow paths; and
- Outside of any depressions in the land.
- To meet the requirements for flood affected land outlined in section 4.22 of this Standard.

All effluent disposal areas associated with an OSMS must be located:

- On the same property that the wastewater is generated;
- On the same property that the OSMS tanks are located; and
- To meet the required buffer distances outlined in section 4.20 of this Standard.
- To meet the requirements for flood affected land outlined in section 4.22 of this Standard.

4.20 Buffer distances

Effluent Disposal Areas associated with OSMS shall observe the required minimum buffer distances shown in Table 1 below.

Table 1 Minimum Setbacks for Effluent Disposal Areas

System	Setbacks	
All land application systems	100m	to permanent surface waters (river, stream, lake etc.)
	250m	to domestic groundwater well
	40m	to other waters (farm dams, intermittent waterways and drainage channels)
	20m	if area up-gradient of any market garden/igloo
	10m	if area down-gradient of any market garden/igloo
Surface spray irrigation	6m	if area up-gradient of driveways and property boundaries
	3m	if area down-gradient of driveways and property boundaries
	15m	to dwellings
	3m	to paths and walkways
	6m	to swimming pools
Surface drip and trickle irrigation	6m	if area up-gradient of swimming pools, driveways, property boundaries and buildings
	3m	if area down-gradient of swimming pools, driveways, property boundaries and buildings
Sub-surface irrigation	6m	if area up-gradient of swimming pools, driveways, property boundaries and buildings
	3 m	if area down -gradient of swimming pools, driveways, property boundaries and buildings
Absorption system	12m	if area up-gradient of property boundaries
	6m	if area down-gradient of property boundaries
	6m	if area up-gradient of swimming pools, driveways, and buildings
	3m	if area down -gradient of swimming pools, driveways, and buildings

4.21 Market Gardens

New or replacement systems for horticulture (Market Garden & Commercial Production Gardens and the like) shall comply with the following:

- The related Effluent Disposal Area is required to be fenced to prevent access of vehicles, animals and any heavy vehicles; and
- Fruit and/or Vegetables are not to be grown on top of, or within the designated effluent disposal area(s) and the associated buffer zones outlined in Table 1.

4.22 Flooding

Flood affected areas can impose a major constraint on properties serviced by an OSMS. The potential inundation of the OSMS tank and effluent disposal areas must be avoided as much as possible. Where it is possible, all OSMS tanks, including their components and associated effluent disposal areas shall be located above the 1% AEP flood contour. Where this is not able to be achieved, the following controls must be met as a minimum:

- All electrical components, vents and inspection openings of the OSMS (tanks) shall be located above the 1% AEP flood contour; and
- No portion an effluent disposal area is permitted to be located below the 5% AEP flood contour.

Where there is potential for an effluent disposal area to be inundated by surface water run-off from roads or other properties, swales or bunding shall be constructed upslope of the disposal area to direct the water away from the disposal area.

4.23 Private open space

Any proposed, existing or reserve effluent disposal areas shall be excluded from calculations for private open space.

4.24 Requirements for consultants

To improve environmental health outcomes and efficiency during the assessment process, Council requires all applications to be supported by technical reports prepared or reviewed and certified by suitably qualified environmental consultants. The report's cover or title page must confirm the consultant and/or reviewer's qualifications.

All wastewater reports submitted to Council must be prepared by an Environmental Scientist or Engineer with a minimum bachelor's degree qualification and extensive industry experience in site and soil assessment within an on-site sewage management context. Note: There is currently no certification

body for this field, however certification schemes may change or evolve over time and therefore Council will consider these schemes as they arise.

4.25 Variations

Any request for a variation to the controls within this Standard must be accompanied by written documentation and shall include all necessary calculations, evidence and justification before any consideration can be given. The justification for the variation request must be based on, and reference, specific sections of relevant Standards or Guidelines such as AS1547:2012 or The Department of Local Government Environment 1998 - Environment & Health Protection Guidelines - On-site Sewage Management for Single Households, and the like.

Each variation request will be considered based on individual merit and may be rejected or accepted at the discretion of Council.

4.26 Approval to Operate an OSMS

Prior to the operation of a newly installed OSMS, an application under Section 68 of the [Local Government Act 1993](#) for approval to operate shall be submitted along with certification of the installation and commissioning of the system. Approval to operate the OSMS will be granted upon successful installation and certification of the system and this approval will be automatically renewed on an annual basis or at a frequency determined by Council.

Council officers may inspect the OSMS in accordance with the inspection standard detailed in section 4.6 of this Standard. Council may modify, revoke or withhold an approval or renewal of approval should the system not comply with the conditions of that approval or the system is found to be inadequately performing or operated in an inappropriate manner.

In accordance with section 107 and 107A of the [Local Government Act 1993](#), Council will automatically issue an Approval to Operate annually to all OSMS. Where a property contains more than one OSMS, each individual system requires a separate Approval to Operate. Fees for the Approval to Operate are included in Council's rates for applicable properties in accordance with Sections 80 and 608 of the [Local Government Act 1993](#).

A system is eligible to receive an Approval to Operate when the following criteria is met:

- The system is registered with Council;
- An application for 'Approval to Operate' under Section 68 of the Local Government Act 1993, has, or has previously, been submitted to Council for the system by the current property owner or occupier of the site;
- The Approval to Operate fees have been paid; and

- The system has not been deemed by Council to be failing or been found to be inadequately performing or operated in an inappropriate manner.

4.27 Fees and Charges

In accordance with Section 608 of the [Local Government Act 1993](#), 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. The fees and charges have been established to recover the costs of resourcing the program, including monitoring and inspecting systems, education and administration.

Fees for applications for Approval to Install/Alter an OSMS are charged per application and are based on the type of system proposed and whether it is a new installation or the alteration of an existing system.

For the purpose of fees and charges, installation and alteration of an OSMS is defined as:

Installation: New or replacement OSMS tanks are proposed, and an associated effluent disposal area is installed or modified.

Alteration: An existing effluent disposal area is proposed to be modified or increased and the existing OSMS tanks remain unchanged. Or, existing OSMS tanks are proposed to be replaced and the associated effluent disposal area remains unchanged

Fees for the renewal of Approval to Operate an OSMS are charged annually and included in the Council Rates Notice issued by Council. See section 4.26 of this Standard for further details.

A list of current fees and charges can be found on Council's website www.liverpool.nsw.gov.au

4.28 Aerated Wastewater Treatment System Servicing Requirements

The operator of an Aerated Wastewater Treatment System shall enter into a service agreement with the manufacturer or a suitably qualified and experienced service agent to service the system every three 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 return system.

The service shall also include a check on the sludge accumulation in the septic tank (primary treatment tank) and the clarifier at least once per year.

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.

4.29 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 irrigation lines, sprinklers and associated plumbing);
- Detailed description of any tests and observations undertaken on the disposal/irrigation area (including all irrigation 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 Liverpool 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.

4.30 Aerated Wastewater Treatment System Service Agent Requirements

The following requirements apply to service agents:

- All agents servicing or repairing OSMS shall be suitably qualified and experienced;
- A means of reporting a system malfunction or breakdown outside normal business hours shall be available; and
- 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. Where the breakdown or malfunction may lead to an overflow or discharge of inadequately treated effluent, a pump-out of the system may be required to minimise the risk to public health and the environment.

4.31 Greywater Re-use

Greywater generally includes wastewater from showers, baths, hand basins, laundry tubs and washing machines. Wastewater from toilets, kitchens, and dishwashers is considered as Blackwater.

There are two methods for reusing greywater. The first involves the re-use of untreated greywater (Greywater Diversion Devices - GDD) and the second involves the re-use of treated Greywater (Greywater Treatment Systems - GTS).

Used responsibly and appropriately, greywater can be distributed to garden, lawns and plants, thereby saving water.

4.32 Greywater Diversion Devices - GDD

Greywater diversion devices involve the installation and operation of a registered greywater diversion device to redirect untreated greywater to the garden or lawn via a sub-surface effluent disposal system.

There are two main types of greywater diversion devices, gravity diversion and pump diversion, and choosing the most appropriate device for a site should be made carefully with consultation with a licensed plumber/drainage engineer and Council.

Greywater diversion devices in sewerred areas do not require an approval to install the device, subject to complying with the following:

- Compliance with Clause 75A of the Local Government (General) Regulation 2005 and NSW Plumbing and Drainage Code of Practice;
- The dwelling must not be connected to an onsite wastewater management system;
- All greywater diversion devices must have the Watermark licence – accreditation from SAI Global;
- Greywater is to be applied to the garden or lawn by a sub-surface disposal only. This will reduce human contact and exposure to the untreated greywater. Sub-surface disposal systems are to be installed not less than 100mm below the ground surface;
- Sub-surface disposal must be a minimum of one metre from all property boundaries;
- Greywater is only utilised during prolonged warm/dry periods (e.g. droughts), with volumes limited to those needed to meet plant water requirements;
- Garden-friendly washing detergents/detergents that are biodegradable, low in phosphorus, sodium, boron, chloride and salt are used – consider using a liquid washing detergent or powder concentrate;
- Greywater is diverted to sewer during periods of wet weather;
- Greywater is not diverted when using bleach, or hair dyes and the like;
- Greywater is not to be used on vegetable gardens supplying food crops that are eaten raw or undercooked or where fruit has fallen to the ground, as this would pose an unacceptable health risk;
- Greywater shall not be stored for more than 24 hours; and
- The device is to be installed by a licenced plumber/drainier.

All premises located within non-sewerred areas, will need to obtain an approval to install the device from Council.

4.33 Domestic Greywater Treatment Systems (DGTS)

Greywater treatment systems involve the installation and operation of an accredited domestic greywater treatment system (DGTS) to treat greywater, enabling reuse for toilet flushing, washing machines and on gardens and lawns. The reuse of treated greywater for flushing of toilets and laundry uses is only permitted if the system accreditation allows such uses.

It is important to consider which Domestic Greywater Treatment systems have been designed to achieve a level of water quality that is suitable for reuse (lawn irrigation or toilet flushing). It is still prohibited to be reused for the following activities:

- Handheld hosing
- Washing/hosing of paths/driveways and motor vehicles
- Watering plants that will be eaten raw or where fruit has fallen to the ground.

The requirements for installing a DGTS are the same as that of an OSMS. Refer to section 4.8.1 of this Standard for submission requirements.

4.34 Legislation and Greywater Regulations

The [Local Government Act 1993](#) and [Local Government \(General\) Regulation 2005](#) regulate the installation and operation of Domestic Greywater Treatment Systems and Greywater Diversion Devices.

The responsibility is placed on the owner/operator to ensure that the system is operating and performing correctly in accordance with legislation, greywater reuse guidelines and Council requirements.

4.35 Decommissioning systems

Any redundant septic tank, collection well or aerated wastewater treatment systems must be demolished, removed or reused in accordance with NSW Health Advisory Note 3 – Revised January 2017 - Destruction Removal or Reuse of Septic Tanks, Collection Wells, Aerated Wastewater Treatment Systems and other Sewage Management Facility Vessels.

4.36 Education

Education plays an important role in the management and regulation of OSMS. OSMS failure is often caused by operator error and being unfamiliar with how a system works and the specific maintenance requirements for the OSMS being operated.

Liverpool City Council is continually developing educational material and keeping it up to date with changes in technology and standards. Council officers are also available to provide advice and education to residents and discuss their specific needs or concerns over the phone.

Councils contact details, along with factsheets and further information on OSMS can be found on Liverpool City Council's website www.liverpool.nsw.gov.au.

Appendix

Absorption	The uptake of effluent into the soil by infiltration and capillary action
Absorption trench or bed	A land application system which uses the principles of absorption
Aerated wastewater treatment system (AWTS)	A system which uses the processes of aeration followed by clarification to achieve biological treatment of wastewater NOTE: AWTS units have been known as 'aerated septic tanks' in some parts of Australia
Design irrigation rate (DIR)	The loading rate that applies to the distribution of effluent to the design area of an irrigation land application system, expressed in L/m ² /day or mm/day
Design loading rate (DLR)	The loading rate that applies to the distribution of effluent to the design area of an absorption trench or bed or mound land application system, expressed in L/m ² /day or mm/day
Disinfection	The method of treatment of wastewater which kills or inactivates microbial pathogens to an acceptable level, satisfactory for the intended use. Its effectiveness is typically measured by the reduction in faecal indicator bacteria <i>E. coli</i>
Effluent	The liquid discharged from an on-site sewage management system, greywater treatment system or other wastewater treatment system
Environmentally unsatisfactory manner	The on-site sewage management system: <ul style="list-style-type: none"> a) Is likely to cause, a pollution incident; b) Is not operated by such practicable means as may be necessary to prevent, control or minimise pollution, the emission of any noise or the discharge of waste; or c) Is not operated in accordance with good environmental practice

Evapotranspiration / absorption (ETA) trench or bed	A land application system that embodies the principles of evaporation, transpiration, and absorption
Greywater	The domestic wastes from a bath, shower, basin, laundry, and kitchen, but excluding toilet and urinal wastes. It may contain pathogens
Groundwater	The body of water in the soil, all the pores of which are saturated with water. If the body of water is present at all times it represents permanent or true groundwater
LPED irrigation	Shallow subsurface irrigation of effluent into topsoil through low pressure effluent distribution (LPED) lines
On-site sewage management system (OSMS)	An on-site wastewater management system that receives, treats, and applies wastewater to a land application system or a holding tank
Primary treatment	The separation of suspended material from wastewater in septic tanks, primary settling chambers, or other structures, before effluent discharge to either a secondary treatment process, or to a land application system
Reserve area	An area set aside for future use as a land application area to replace or extend the original land application system. The reserve area must be kept clear of any form of structure or development
Secondary treatment	Aerobic biological processing and settling or filtering of effluent received from a primary treatment unit
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 contained therein can be decomposed (digested) by anaerobic bacterial action in the liquid

Sewerage	The network of collection drains carrying domestic wastewater or effluent away from properties for off-site treatment
Sludge	The semi-liquid solids settled from wastewater
Wastewater	The discharge from sanitary fixtures and sanitary appliances, including backwater and / or greywater.

Attachment 1

Council Inspection Report Extract

PERFORMANCE STANDARDS	
<input type="checkbox"/> Action is required to ensure the system of sewage management is operated in a manner that achieves the below performance standards;	
<input type="checkbox"/> The prevention of the spread of disease by micro-organisms	<input type="checkbox"/> The prevention of degradation of soil and vegetation
<input type="checkbox"/> The prevention of the spread of foul odours	<input type="checkbox"/> The discouragement of insects and vermin
<input type="checkbox"/> The prevention of contamination of water	<input type="checkbox"/> The provision for the re-use of resources
<input type="checkbox"/> Ensure that persons do not come into contact with untreated sewage or effluent (whether treated or not) in their ordinary activities	
<input type="checkbox"/> The minimisation of any adverse impacts on the amenity of the premises and surrounding lands	
BUFFER DISTANCES	Spray Irrigation
<input type="checkbox"/> Ensure the effluent disposal area is greater than 100 m from permanent surface waters	<input type="checkbox"/> Ensure the effluent disposal area is greater than 6m up slope/3m down slope from driveways & property boundaries
<input type="checkbox"/> Ensure the effluent disposal area is greater than 250 m from domestic groundwater	<input type="checkbox"/> Ensure the effluent disposal area is greater than 15m from dwellings
<input type="checkbox"/> Ensure the effluent disposal area is greater than 40 m from other waters (e.g. intermittent waterways, dams)	<input type="checkbox"/> Ensure the effluent disposal area is greater than 6m from swimming pools
	<input type="checkbox"/> Ensure the effluent disposal area is greater than 3m from paths and walkways
Absorption disposal methods	Subsurface & Trickle Irrigation
<input type="checkbox"/> Ensure the effluent disposal area is greater than 12m up slope/6 m down slope from property boundaries	<input type="checkbox"/> Ensure the effluent disposal area is greater than 6m up/3m down from property boundaries, swimming pools, driveways and buildings
<input type="checkbox"/> Ensure the effluent disposal area is greater than 6m up slope/3 m down slope from pools, driveways and buildings	
TANKS & GENERAL	
<input type="checkbox"/> Ensure the lid and inspection ports are undamaged and in place	<input type="checkbox"/> The tank requires a pump-out
<input type="checkbox"/> Ensure the tank is accessible	<input type="checkbox"/> The tank requires repair
<input type="checkbox"/> Cease traversing over effluent disposal area	<input type="checkbox"/> Cease using the effluent disposal area for other purposes
<input type="checkbox"/> Ensure all effluents disposal is within the property boundaries	<input type="checkbox"/> Ensure grass in effluent disposal area is kept below 100mm high
<input type="checkbox"/> Ensure system is operated in compliance with the conditions of the Approval to Operate issued by Council	
<input type="checkbox"/> Ensure the effluent disposal area is located and sized in accordance with the Approval to Install issued by Council	
AWTS & IRRIGATION AREA	
<input type="checkbox"/> Send the most recent service report to Council	<input type="checkbox"/> Bury the irrigation line to a fixed point
<input type="checkbox"/> Ensure there is sufficient irrigation area	<input type="checkbox"/> Install irrigation warning signs
<input type="checkbox"/> Ensure effluent is evenly distributed	<input type="checkbox"/> Ensure the system is fully operational e.g. - chlorine tablets, UV lamp, alarms, pumps etc.
<input type="checkbox"/> Ensure only appropriate irrigation lines and fittings are used	
SEPTIC TANKS, BIOLOGICAL SYSTEMS: ABSORPTION TRENCES, EVAPOTRANSPIRATION BEDS & MOUNDS	
<input type="checkbox"/> The grease trap requires cleaning	<input type="checkbox"/> Ensure greywater is disposed of appropriately
<input type="checkbox"/> The disposal area is showing signs of stress	<input type="checkbox"/> The disposal area is failing
PUMP OUT SYSTEMS	
<input type="checkbox"/> Enter into a pump-out contract	<input type="checkbox"/> Provide the most recent pump-out receipt to Council
<input type="checkbox"/> Install a draw line with a cam lock	<input type="checkbox"/> Ensure greywater is disposed of appropriately
COMMENTS:	

AUTHORISED BY
Chief Executive Officer

EFFECTIVE FROM

28 April 2021

REVIEW DATE

28 April 2025 or sooner if legislative or policy changes occur.

VERSIONS

Version	Amended by	Changes made	Date	TRIM Number
1	Not Applicable	Original adoption	28 April 2021	055889.2021

THIS STANDARD HAS BEEN DEVELOPED IN CONSULTATION WITH

Industry experts, wastewater consultants, Council's Development Assessment, Planning and Transport Strategy, and Governance teams.

REFERENCES

NSW Health 2001, Septic Tank and Collection Well Accreditation Guideline

Department of Local Government 1998, On-site Sewage Management for Single Households

Sydney Catchment Authority 2012, Designing and Installing On-site Wastewater Systems

Australian/New Zealand Standard 1547:2012, On-site Domestic Wastewater Management

Australian/New Zealand Standard 1546.1:2008 On-site Domestic Wastewater Treatment Units Septic Tanks

Australian/New Zealand Standard 1546.2:2008 On-Site Domestic Wastewater Treatment Units Waterless Composting Toilets

Australian/New Zealand Standard 1546.3:2017 On-Site Domestic Wastewater Treatment Units Secondary Treatment Systems

Australian/New Zealand Standard 1546.4:2016 On-Site Domestic Wastewater Treatment Units Domestic Greywater Treatment Systems