

CODE OF PRACTICE

Code name	On-Site Sewage Management
Responsible manager(s)	Divisional Manager, Environmental Services
Contact officer(s)	Divisional Manager, Environmental Services
Directorate	Planning & Sustainability
Approval date	13 November 2018
Community Strategic Plan Outcome	3. Protected and valued natural environment 4. Sustainable living
Delivery Program link	3.3.2 Monitor and manage impacts on our waterways
Operational Plan link	3.3.2.3 Deliver the On-Site Sewage Management System inspection program

Summary

The purpose of this Code of Practice is to ensure that On-Site Sewage Management (OSSM) systems meet best practice environmental and health performance standards and provide a sustainable option for wastewater management.

Eurobodalla Shire Council developed an OSSM Plan in 1998, and implemented it in 1999. The aim of this Code of Practice is to offer guidance in preparing applications to Council, clarify what is required and how to apply the various related documents, and to describe how systems will continue to be monitored once installed.

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1 INTRODUCTION

1.1 Purpose

The purpose of this Code of Practice is to ensure that On-Site Sewage Management (OSSM) systems meet best practice environmental and health performance standards and provide a sustainable option for wastewater management.

The aim of this Code is to offer guidance in preparing applications to Council, clarify what is required and how to apply the various related documents, and to describe how systems will continue to be monitored once installed.

1.2 Land to which this code applies

This Code of Practice applies to all land within the Eurobodalla Shire Council Local Government Area (LGA) with the exception of National Parks, as outlined in the Department of Local Government Circular 99/59.

1.3 Objectives

The objectives of this Code are to provide a framework to:

- Ensure transparency, consistency and fairness in the manner in which Council deals with OSSM;
- Assess and regulate the design, installation and operation of OSSM systems in the Eurobodalla Local Government Area;
- Protect and enhance public health and the environment from potential OSSM impacts;
- Promote awareness of requirements with respect to OSSM.

1.4 Relationship to Legislation/ Policy/ Plan

This Code should be read in conjunction with the latest available editions or revisions of the following:

1.4.1 Legislation

- [Local Government Act 1993](#)
- [Local Government \(General\) Regulation 2005](#)
- [Environmental Planning and Assessment Act 1979](#)
- [Environmental Planning and Assessment Regulation 2000](#)

1.4.2 Standards and Guidelines

- AS/NZS 1546:1-3 On-site domestic wastewater treatment units
- AS/NZS 1547:2012 On-Site domestic wastewater management
- AS/NZS 3500:2012 Plumbing and drainage
- [Designing and Installing On-site Wastewater Systems, Sydney Catchment Authority 2012](#)
- [Environment & Health Protection Guidelines: On-site sewage management for single households \(the 'Silver Book'\), NSW Department of Local Government, 1998](#)
- [Healthy Estuaries For Healthy Oysters Guidelines, NSW Department of Primary Industries, 2017](#)
- [Neutral or Beneficial Effect on Water Quality Assessment Guideline \(NorBE\), Sydney Catchment Authority, 2015](#)
- [NSW Guidelines for Greywater Reuse in Sewered, Single Household Residential Premises, NSW Department of Energy, Utilities and Sustainability, 2008](#)
- [NSW Health Servicing of Single Domestic Sewage Management Facilities Advisory Note 5.](#)
- Plumbing Code of Australia 2016
- [Water Sensitive Design Guide for Rural Residential Subdivisions, Sydney Catchment Authority, 2011](#)

1.5 Version

- This Code came into force on 13 November 2018.
- This Code replaces the Eurobodalla Shire Council On-Site Sewage Management Code of Practice September 2013.

2 CODE DETAILS

2.1 Systems covered by this Code of Practice

- All OSSM systems and disposal unless the system is required to be licensed under the *Protection of the Environment Operations Act 1997* Schedule 1;
- Effluent pump-out systems;
- Domestic greywater treatment and reuse systems;
- Greywater disposal systems.

2.2 Applications and approvals

2.2.1 Exemptions

- Council approval for a system is not required if the system is exempt under the provisions of the *Local Government Act 1993* and the *Local Government (General) Regulation 2005*.
- Council must be notified prior to the installation of an exempt system; or, if the exempt system meets the criteria for exemption of a greywater diversion device in reticulated sewered areas under clause 75(A)(2) of the *Local Government (General) Regulation 2005*, following installation in accordance with 7.1.1.
- Exempt systems may still be included in Council's OSSM System Inspection Program.

2.2.2 Applications

Any system of sewage management which is not exempt must not be installed or operated in the Eurobodalla Shire Council Local Government Area unless:

- An application in accordance with s68 of the *Local Government Act 1993* is made to Council on the appropriate form accompanied by required supporting material and the appropriate fees; and
- Approval has been given in writing by the owner for Council to enter the property for the means of undertaking inspections; and
- Council approval has been granted in writing to install and operate the system of sewage management and conditions of the approval have been met.

2.2.3 Application fees and charges

Details of application fees are available from Council's publication – Fees and Charges.

2.3 Performance standards

2.3.1 Performance criteria and acceptable solutions

The following performance standards apply for the design, installation and construction methods for all applications to install/alter and operate an OSSM system.

Performance criteria	Acceptable solutions																	
<p>P1 Proposed system complies with clause 41 of the <i>Local Government (General) Regulation 2005</i></p>	<p>A1</p> <ul style="list-style-type: none"> a) The system has NSW Health Accreditation; or b) Is exempt under the Regulation and NSW Advisory Note 1; and c) Is approved by NSW Fair Trading as an alternative solution. 																	
<p>P2 The development is consistent with the requirements of any ESC instrument on title under <i>Part 6, Division 4 of the Conveyancing Act 1919</i></p>	<p>A2</p> <ul style="list-style-type: none"> a) Effluent management area is identified on the title and is consistent with the proposal; or b) Where the Instrument is to Council's benefit, that an equal or superior solution is presented. 																	
<p>P3 Proposal is for an effluent pump-out system</p> <p>NOTE: <i>Development relying on pump-out systems is not a viable option in the long term because of widespread misuse and abuse by the householder and prohibitive operation costs. They may be considered on a case-by-case basis where acceptable solutions in A3 are demonstrated.</i></p>	<p>A3</p> <ul style="list-style-type: none"> a) Area is proposed to be connected to reticulated sewer in the near future; b) Existing lot cannot support full on-site effluent disposal; and c) Partial on-site wastewater disposal has been considered; and d) Collection well(s) to be fitted with an alarm; and e) Collection wells sized as per Table 2.3 of the <i>'Designing and Installing On-site Waste water Systems'</i> (SCA, 2012), below: <table border="1" data-bbox="630 1226 1549 1430"> <thead> <tr> <th rowspan="2">Number of bedrooms</th> <th colspan="2">Collection well size (litres)</th> </tr> <tr> <th>Tank water</th> <th>Reticulated / bore water</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>10,000</td> <td>16,000</td> </tr> <tr> <td>4</td> <td>14,000</td> <td>21,000</td> </tr> <tr> <td>5</td> <td>16,000</td> <td>24,000</td> </tr> <tr> <td>6</td> <td>18,000</td> <td>26,000</td> </tr> </tbody> </table> <ul style="list-style-type: none"> f) Development where an increase in the intensity of occupancy is proposed (e.g. single to dual occupancy) shall not rely solely on an effluent pump-out system. 	Number of bedrooms	Collection well size (litres)		Tank water	Reticulated / bore water	3	10,000	16,000	4	14,000	21,000	5	16,000	24,000	6	18,000	26,000
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	Tank water	Reticulated / bore water																
3	10,000	16,000																
4	14,000	21,000																
5	16,000	24,000																
6	18,000	26,000																
<p>P4 The proposal is for a subdivision</p>	<p>A4</p> <ul style="list-style-type: none"> a) Assessment is undertaken in accordance with Appendix C in AS/NZS 1547:2012; b) Chapter 3 in the <i>'Water Sensitive Design Guide for Rural Residential Subdivisions'</i> (SCA, 2011) has been used for effluent management areas and loadings. <ul style="list-style-type: none"> 1. An effluent management area of 1600m² will generally be required for nominated sites; 2. Minimum loadings of 1200L/d (reticulated/bore water) or 800L/d (tank water) are to be used for calculating hydraulic disposal areas. 																	

Performance criteria	Acceptable solutions															
	<p>c) All proposed subdivision developments must demonstrate a sustainable on-site sewage management option for each proposed lot.</p>															
P5 Site & Soil Assessment has been undertaken	<p>A5</p> <p>a) Assessment has been undertaken in accordance with Section 2 of <i>'Designing and Installing On-site Waste water Systems'</i> (SCA, 2012) and/or AS/NZS 1547:2012;</p> <p>b) Appropriate design loading rate (DLR) or design irrigation rate (DIR) is used according to the soil description as per either Table L1, M1 or N1 of AS/NZS 1547:2012 depending on proposed method of disposal;</p> <p>c) Water balance is calculated in accordance with local median rainfall and evaporation records where available or using the data in Table 1 below.</p>															
P6 Design daily loadings are appropriate for the development	<p>A6</p> <p>a) Daily loading per potential bedroom are as per Table 2.1 of the <i>'Designing and Installing On-site Waste water Systems'</i> (SCA, 2012), below:</p> <table border="1" data-bbox="630 1024 1549 1350"> <thead> <tr> <th>Design Wastewater loading for each potential bedroom</th> <th>Reticulated/bore Water</th> <th>Tank Water</th> </tr> </thead> <tbody> <tr> <td>1-2 potential bedrooms</td> <td>600 L/d</td> <td>400 L/d</td> </tr> <tr> <td>3 potential bedrooms</td> <td>900 L/d</td> <td>600 L/d</td> </tr> <tr> <td>4 potential bedrooms</td> <td>1200 L/d</td> <td>800 L/d</td> </tr> <tr> <td>More than 4 potential bedrooms</td> <td>1200 L/d plus 150 L/d for each additional bedroom</td> <td>800 L/d plus 100 L/d for each additional bedroom</td> </tr> </tbody> </table> <p>b) Ancillary structures – refer to A7;</p> <p>c) Separation of waste streams – greywater loading should be taken as 65% of the total loading;</p> <p>d) A potential bedroom is that defined in the <i>'Neutral or Beneficial Effect on Water Quality Assessment Guideline'</i> (SCA, 2015).</p>	Design Wastewater loading for each potential bedroom	Reticulated/bore Water	Tank Water	1-2 potential bedrooms	600 L/d	400 L/d	3 potential bedrooms	900 L/d	600 L/d	4 potential bedrooms	1200 L/d	800 L/d	More than 4 potential bedrooms	1200 L/d plus 150 L/d for each additional bedroom	800 L/d plus 100 L/d for each additional bedroom
Design Wastewater loading for each potential bedroom	Reticulated/bore Water	Tank Water														
1-2 potential bedrooms	600 L/d	400 L/d														
3 potential bedrooms	900 L/d	600 L/d														
4 potential bedrooms	1200 L/d	800 L/d														
More than 4 potential bedrooms	1200 L/d plus 150 L/d for each additional bedroom	800 L/d plus 100 L/d for each additional bedroom														
P7 Proposal addresses all wastewater generated on the site	<p>A7</p> <p>a) Loadings from non-habitable serviced ancillary structures shall be calculated using Table H2 from AS/NZS 1547:2012.</p>															
P8 Proposed disposal method is appropriate for the slope.	<p>A8</p> <p>a) Is less than maximum slope requirements as outlined in Table K1 of AS/NZS 1547:2012; and</p> <p>b) Design includes methods of preventing surface water flow onto effluent management areas; and</p> <p>c) Subsurface irrigation DIR is reduced with increasing slope in accordance with Table M2 of AS/NZS 1547:2012.</p>															

Performance criteria	Acceptable solutions															
P9 Buffer distances are appropriate to the development.	<p>A9</p> <ul style="list-style-type: none"> a) Buffers meet those outlined in Table 2.4 of the <i>'Designing and Installing On-site Waste water Systems'</i> (SCA, 2012); and b) Buffers apply to entire effluent management area; and c) Additional buffers to site specific factors may be applied (such as to significant vegetation); d) Variations to buffers with assessment using Tables R1 & R2 of AS/NZS 1547:2012 may be considered. 															
P10 The nominated system requires regular servicing	<p>A10</p> <ul style="list-style-type: none"> a) An appropriately qualified service technician is available in the area for servicing and repairs; and b) All servicing and maintenance of the system, and any associated costs is the owner's responsibility; and c) Owners must be provided with adequate information on the operation and maintenance of the system. 															
P11 Where surface, shallow sub-surface or LPED disposal is nominated, nutrients are contained on-site and within buffers	<p>A11</p> <ul style="list-style-type: none"> a) The 'minimum area method' as outlined in Appendix 6 <i>'Environment & Health Protection Guidelines: On-site Sewage Management for Single Households'</i> is preferred; b) Where this method is not applied, the hydraulic irrigation area shall be sized in accordance with AS/NZS 1547:2012 and an area for the calculated nutrient uptake to be reserved downslope following the natural flow; c) Where wastewater nutrient concentrations are not specified in the NSW Health Certificate of Accreditation for the system, then the design parameters as shown below shall be used: <table border="1" data-bbox="626 1291 1550 1545"> <thead> <tr> <th>Parameter</th> <th>Septic Tank Effluent</th> <th>Greywater Effluent</th> <th>AWTS Effluent</th> <th>Critical Loading Rate of Nutrient</th> </tr> </thead> <tbody> <tr> <td>Total Nitrogen</td> <td>55mg/L</td> <td>15mg/L</td> <td>30mg/L</td> <td>25mg/m²/d</td> </tr> <tr> <td>Total Phosphorus</td> <td>12mg/L</td> <td>10mg/L</td> <td>12mg/L</td> <td>2.8mg/m²/d</td> </tr> </tbody> </table>	Parameter	Septic Tank Effluent	Greywater Effluent	AWTS Effluent	Critical Loading Rate of Nutrient	Total Nitrogen	55mg/L	15mg/L	30mg/L	25mg/m ² /d	Total Phosphorus	12mg/L	10mg/L	12mg/L	2.8mg/m ² /d
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Total Phosphorus	12mg/L	10mg/L	12mg/L	2.8mg/m ² /d												
P12 Risk Rating assessment has been undertaken	<p>A12 The risk rating is determined on the potential of the system's impact to public health and the environment in accordance with the OSSM Risk Assessment matrix (Appendix 5).</p>															

Performance criteria	Acceptable solutions
<p>P13 Proposal includes separate grey water treatment/disposal</p>	<p>A13</p> <ul style="list-style-type: none"> a) Approval under s68 of the <i>Local Government Act 1993</i> is required unless the property is exempt; b) To be exempt the property must be connected to sewer and a <i>greywater diversion device</i> is installed in accordance with clause 75A (2) of the <i>Local Government (General) Regulation 2005</i> and the ‘<i>NSW Guidelines for Greywater Reuse in Sewered, Single Household Residential Premises</i>’ (NSW Government, 2008); c) All applications must include a full site and soil assessment as per P5 above. <p><i>Note: Council accepts applications for greywater diversion, however this is not considered a method of treatment and cannot be used to reduce the hydraulic load used to calculate the size of the required effluent disposal system.</i></p>
<p>P14 Proposal is for a Pit Toilet</p>	<p>A14</p> <ul style="list-style-type: none"> a) The location of the pit toilet must meet all required buffers outlined in Appendix 4; and b) The soil category must be in the range of 4 (clay loams) to 6 (medium to heavy clays) below 500mm from top level of the pit; and c) The groundwater level must be in excess of 1.5m below the base of the pit; and d) Occupation of the site not to exceed 60 days in any 12 month period; and e) Construction should be in accordance with the World Health Organisation specifications for simple pit latrines, ventilated improved pit (VIP) or Reed’s odourless earth closet (ROEC); and f) Details of the separate disposal of other wastewater on the site (such as kitchen, laundry and bathroom) to be provided; and g) Property is to be owner-occupied only; and h) Changes of property ownership requires a new application.

2.3.2 Variations

Where acceptable solutions in 2.3.1 are not adopted the proponent must submit an alternate solution prepared by a suitably qualified and experienced person for assessment by Council. Any variation must demonstrate an equal or superior outcome to performance standards in section 2.3.1.

Table 1: Precipitation, Evaporation and Crop Factor

Month	Days per Month	Daily Pan Evaporation (mm)	Median Rainfall (mm/month)	Crop Factor
January	31	6.3	75.3	0.8
February	28	5.7	66.7	0.8
March	31	4.7	70.7	0.8
April	30	4	54.9	0.8
May	31	3.1	55.8	0.7
June	30	2.9	47.8	0.6
July	31	3	34.3	0.6
August	31	4.1	27.9	0.6
September	30	4.9	44.3	0.7
October	31	5.7	57.7	0.8
November	30	6.1	63	0.8
December	31	6.7	58.5	0.8

2.4 On-Site Sewage Management (OSSM) System Inspection Program

2.4.1 Inspection process

Council is required to implement and maintain an OSSM system inspection program by the Department of Local Government and NSW state legislation. The inspection process is outlined in Appendix 2. Owners will be notified by letter prior to the inspection where permission in writing has not been given by the owner or the owner has requested notification. Where the owner/occupant wishes to be present at the time of inspection, they can notify and liaise with Council to do so.

2.4.2 Fees and charges

Details of inspection fees are available from Council's publication – Fees and Charges.

2.4.3 Risk rating

New sites shall be given a risk rating in accordance with the OSSM Risk Assessment Matrix (Appendix 5) at the time of approval and existing sites at the time of the first inspection. The risk rating shall determine the frequency of inspections which are:

- High – inspected annually;
- Medium – inspected every two years;
- Low – inspected every five years.

2.4.3.1 Downgrade of risk rating

Property owners with OSSM systems rated as high and medium risk who have demonstrated a high level of care and maintenance of their system may apply to Council to have their risk rating downgraded if they meet the following criteria:

- a) No defects have been identified for the last 3 inspections (high risk) or 2 inspections (medium risk);
- b) The property has remained in the same ownership during the above inspections;
- c) The property is owner/occupied (not tenanted or holiday rented);

For applications to downgrade an OSSM system to low risk, an assessment will also be undertaken in accordance with the risk assessment matrix in Appendix 5. Consideration will be given to the level of risk to public health and the environment when assessing the application.

If the risk rating is downgraded, it may remain at the lower risk level if the following criteria are met:

- a) No defects are identified at any subsequent inspection;
- b) The property remains in the same ownership;
- c) The property remains owner/occupied (not tenanted or holiday rented).

Properties can only downgrade by the one level from their original risk assessment.

2.4.3.2 Upgrade of risk rating

Property owners with OSSM systems that are observed to be poorly performing and/or that pose a risk to public health and/or the environment may have their risk rating upgraded if the following criteria are met:

- a) Compliance action has been required pertaining to the operating performance of the OSSM; or
- b) Defects have been identified for the last 2 inspections.

2.4.4 Regular servicing and Council inspection of Aerated Wastewater Treatment Systems

Aerated wastewater treatment systems (AWTS) undergo two levels of attention:

- a) Regular servicing by an accredited AWTS service technician:
This is required as part of the NSW Health Accreditation of the system, and enables the system to be used in NSW. Servicing is generally carried out on a three-monthly basis depending on the accreditation. The owner is required to enter into an annual service contract with an accredited technician registered with Council in accordance with NSW Health Advisory Note 5.
- b) Council inspection is required by the Department of Local Government and is undertaken as part of Council's OSSM System Inspection Program on a regular basis determined by the risk assessment rating.

A well serviced and maintained AWTS will assist in qualifying for a downgrade for high and medium risk systems (see section 2.4.3.1).

2.4.5 Requirements for Aerated Wastewater Treatment System service technicians

In February 2018, NSW Health introduced new requirements for service technicians to be accredited by the manufacturer of the system (See NSW Health Advisory Note 5).

A list of accredited service technicians registered with Council is available upon request from Council.

2.4.6 Auditing process

Systems which are required by NSW Health to undergo regular servicing must meet performance criteria. These criteria are outlined in the system's NSW Health Accreditation Certificate.

Council may undertake auditing programs from time to time to ensure that the servicing standard of the systems meet the required performance criteria.

3 RESPONSIBILITIES

3.1 Staff

Under supervision, applicable Council staff will be responsible for ensuring that this Code is implemented appropriately within their work area, after they have received relevant training to do so.

3.2 Requests and Concerns

Requests and concerns received from the community regarding this Code will be recorded and handled in accordance with Council's Customer Service Policy. They will be used to help determine follow up actions and to analyse the history of requests and concerns.

3.3 Complaints

Complaints received regarding this Code will be lodged with Council and handled in accordance with Council's Complaints Policy.

3.4 Consultation

Any necessary consultation will occur when and if required with key stakeholders and may include the community, legislative bodies, other relevant legislation, and industry guidelines. Public submissions will be considered during the exhibition period. Consultation with industry professionals in the local area and consideration of community submissions has occurred in the development of this Code.

4 MONITORING AND REVIEW

This Code may be reviewed and updated as necessary when legislation or policy requires it; or Council's functions, structure or activities change; or when technological advances or new systems change the way that Council manages OSSM.

5 ACKNOWLEDGEMENTS

Eurobodalla Shire Council acknowledges the assistance in the development of this Code of Practice given by Division of Local Government, NSW Health, Water NSW, participants in Council's consultation with industry professionals and the community submissions.

6 SUPPORTING DOCUMENTS

The following documents support this Code of Practice:

Name	Link
Approvals Process Flow Chart	Appendix 1
Inspection Process Flow Chart	Appendix 2
Guidelines for Horizontal and Vertical Setback Distances (from AS/NZS 1547:2012)	Appendix 3
Table 2.4 Buffer Distances (from 'Designing and Installing On-site Waste water Systems' (SCA, 2012))	Appendix 4
OSSM System Risk Assessment Matrix	Appendix 5

7 GOVERNANCE

Related legislation and policies

Name	Link
<i>Local Government Act 1993</i>	www.austlii.edu.au/au/legis/nsw/consol_act/lga1993182
<i>Local Government (General) Regulation 2005</i>	http://www.austlii.edu.au/cgi-bin/viewdb/au/legis/nsw/consol_reg/lgr2005328/
<i>Environmental Planning and Assessment Act 1979</i>	http://www.austlii.edu.au/cgi-bin/viewdb/au/legis/nsw/consol_act/epaaa1979389/
<i>Environmental Planning and Assessment Regulation 2000</i>	http://www.austlii.edu.au/cgi-bin/viewdb/au/legis/nsw/consol_reg/epaar2000480/

Related external references

Name	Link
Division of Local Government	www.dlg.nsw.gov.au/
AS/NZS 1546:1-3 On-site domestic wastewater treatment units	-
AS/NZS 1547:2012 On-Site domestic wastewater management	-
AS/NZS 3500:2012 Plumbing and drainage	-
Designing and Installing On-site Wastewater Systems, Sydney Catchment Authority 2012	http://www.waternsw.com.au/_data/assets/pdf_file/0003/58251/Designing-and-Installing-On-Site-Wastewater-Systems-complete-document.pdf
Environment & Health Protection Guidelines: On-site sewage management for single households (the 'Silver Book'), NSW Department of Local Government, 1998	https://www.olg.nsw.gov.au/sites/default/files/Onsite-sewage-management-guide.pdf
Healthy Estuaries for Healthy Oysters Guidelines, NSW Department of Primary Industries, 2017	http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0009/738972/Healthy-Estuaries-for-Healthy-Oysters-Guidelines.pdf
Neutral or Beneficial Effect on Water Quality Assessment Guideline (NorBE), Sydney Catchment Authority, 2015	http://www.waternsw.com.au/_data/assets/pdf_file/0009/55989/NorBE-Assessment-Guidelines-2015.pdf
NSW Guidelines for Greywater Reuse in Sewered, Single Household Residential Premises, NSW Department of Energy, Utilities and Sustainability, 2008	http://www.water.nsw.gov.au/_data/assets/pdf_file/0008/557324/recycling_grey_nsw_guidelines_for_greywater_reuse_in_sewered_single_household_residential_premises.pdf
NSW Health Servicing of Single Domestic Sewage Management Facilities Advisory Note 5.	http://www.health.nsw.gov.au/environment/domesticwastewater/Documents/adnote5.pdf
Water Sensitive Design Guide for Rural Residential Subdivisions, Sydney Catchment Authority, 2011	http://www.waternsw.com.au/_data/assets/pdf_file/0003/56478/Water-sensitive-design-for-rural-subdivision.pdf

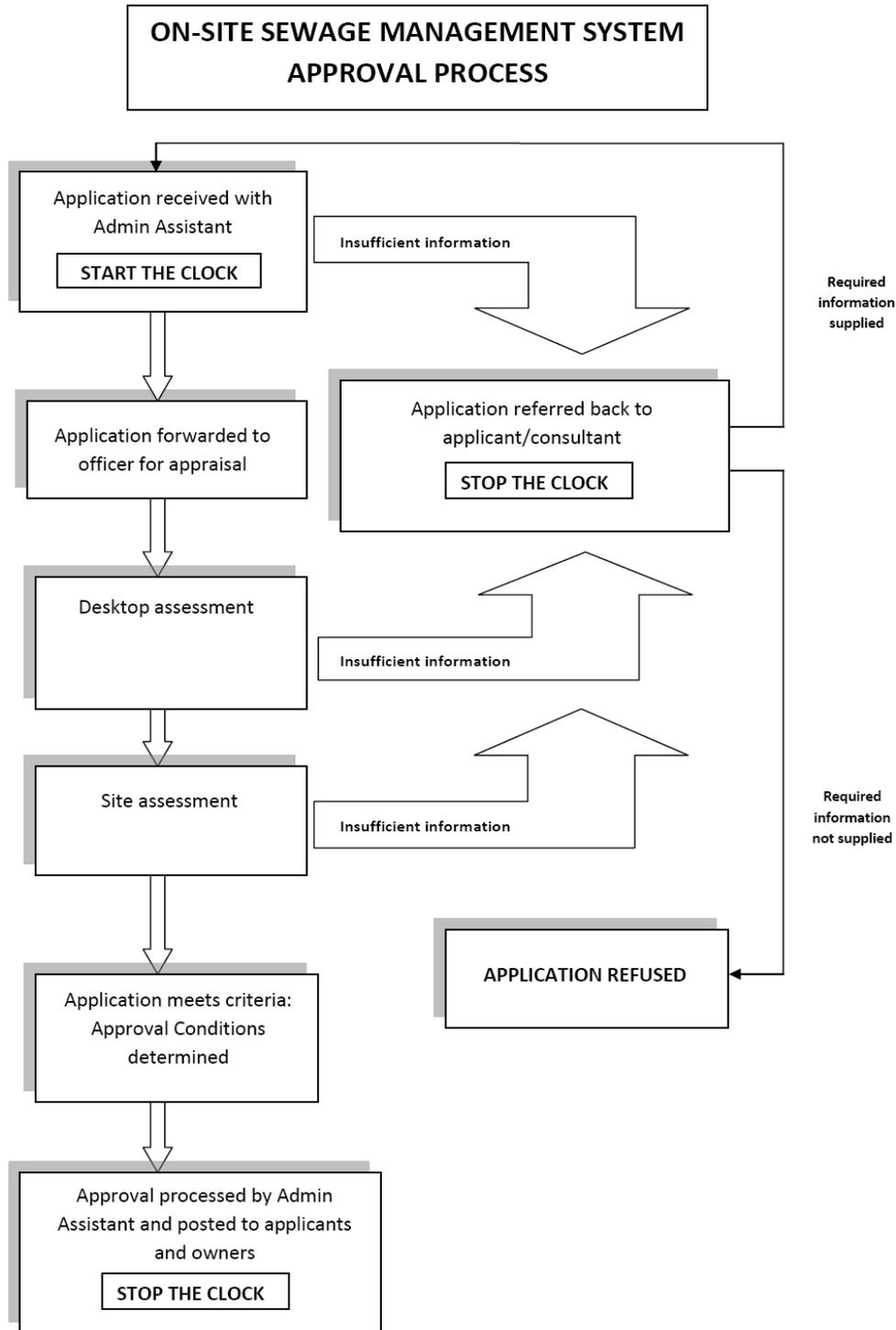
Change history

Version	Approval date	Approved by	Min No	File No	Change
1	20 Feb 2010	Internal	NA	NA	Code commenced
2	24 Sep 2013	Council	13/289	E13.7095	Reviewed and updated. Ref report O13/75 Council meeting 24/09/2013
3	11 Dec 2013	Internal	N/A	N/A	Reviewed and updated

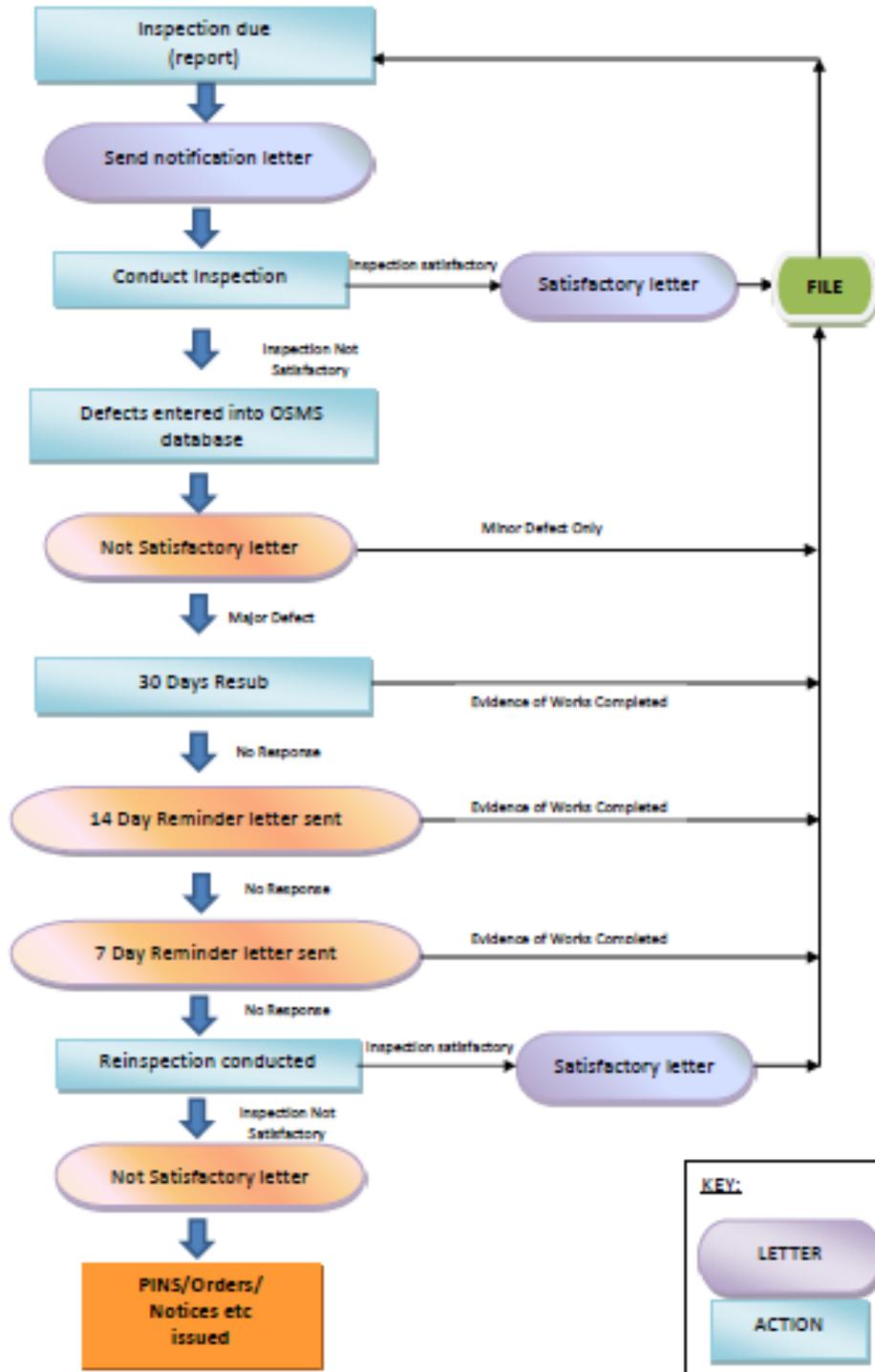
Internal use

Responsible officer		Divisional Manager, Environmental Services		Approved by	Council
Min no	18/333	Report no	PSR18/088	Effective date	13 Nov 2018
File No	E98.2467	Review date	Nov 2023	Pages	20

Appendix 1. Approvals Process Flow Chart



Appendix 2. Inspection Process Flow Chart



Appendix 3. Table R1 – Guidelines for Horizontal and Vertical Setback Distances (from AS/NZS 1547:2012)

Site feature	Setback distance range (m) (See Note 1)	Site constraint items of specific concern (from Table R2) (see Note 1)
Horizontal setback distance (m)		
Property boundary	1.5 – 50 (see Note 2)	A, D, J
Buildings/houses	2.0 - > 6 (see Note 3)	A, D, J
Surface water (see Note 4)	15 - 100	A, B, D, E, F, G, J
Bore, well (see Notes 5 and 6)	15 – 50	A, C, H, J
Recreational areas (Children’s play areas, swimming pools and so on) (see Note 7)	3 – 15 (see Notes 8 and 9)	A, E, J
In-ground water tank	4 – 15 (see Note 10)	A, E, J
Retaining wall and Embankments, escarpments, cuttings (see Note 11)	3.0 m or 45° angle from toe to wall (whichever is greatest)	D, G, H
Vertical setback distance (m)		
Groundwater (see Notes 5, 6 and 12)	0.6 - > 1.5	A, C, F, H, I, J
Hardpan or bedrock	0.5 - ≥ 1.5	A, C, J
NOTES: 1. The overall setback distance should be commensurate with the level of risk to public health and the environment. For example, the maximum setback distance should be adopted where site/system features are on the high end of the constraint scale. The setback distance should be based on an evaluation of the constraint items and corresponding sensitive features in Table R2 and how these interact to provide a pathway or barrier for wastewater movement. 2. Subject to local regulatory rules and design by a suitably qualified and experienced person, the separation of a drip line system from an upslope boundary, for slopes greater than 5%, may be reduced to 0.5 m.		

TABLE R1
GUIDELINES FOR HORIZONTAL AND VERTICAL SETBACK DISTANCES
(to be used in conjunction with Table R2) (continued)

3. Setback distances of less than 3 m from houses are appropriate only where a drip irrigation land application system is being used with low design irrigation rates, where shallow subsurface systems are being used with equivalent low areal loading rates, where the risk of reducing the bearing capacity of the foundation or damaging the structure is low, or where an effective barrier (designed by a suitably qualified and experienced person) can be installed. This may require consent from the regulatory authority.
4. Setback distance from surface water is defined as the areal edge of the land application system to the edge of the water. Where land application areas are planned in a water supply catchment, advice on adequate buffer distances should be sought from the relevant water authority and a hydrogeologist. Surface water, in this case, refers to any fresh water or geothermal water in a river, lake, stream, or wetland that may be permanently or intermittently flowing. Surface water also includes water in the coastal marine area and water in man-made drains, channels, and dams unless these are to specifically divert surface water away from the land application area. Surface water excludes any water in a pipe or tank.
5. Highly permeable stony soils and gravel aquifers potentially allow microorganisms to be readily transported up to hundreds of metres down the gradient of an on-site system (see R3, Table 1 in Pang et al. 2005). Maximum setback distances are recommended where site constraints are identified at a high scale for items A, C, and H. For reading and guidance on setback distances in highly permeable soils and coarse-grained aquifers see R3. As microbial removal is not linear with distance, data extrapolation of experiments should not be relied upon unless the data has been verified in the field. Advice on adequate buffer distances should be sought from the relevant water authority and a hydrogeologist.
6. Setback distances from water supply bores should be reviewed on a case-by-case basis. Distance can depend on many factors including soil type, rainfall, depth and casing of bore, direction of groundwater flow, type of microorganisms, existing quality of receiving waters, and resource value of waters.
7. Where effluent is applied to the surface by covered drip or spray irrigation, the maximum value is recommended.
8. In the case of subsurface application of primary treated effluent by LPED irrigation, the upper value is recommended.
9. In the case of subsurface spray, the setback distances are based on a spray plume with a diameter not exceeding 2 m or a plume height not exceeding 0.5 m above finished surface level. The potential for aerosols being carried by the wind also needs to be taken into account.
10. It is recommended that land application of primary treated effluent be down gradient of in-ground water tanks.
11. When determining minimum distances from retaining walls, embankments, or cut slopes, the type of land application system, soil types and soil layering should also be taken into account to avoid wastewater collecting in the subsoil drains or seepage through cuts and embankments. Where these situations occur setback clearances may need to be increased. In areas where slope stability is of concern, advice from a suitably qualified and experienced person may be required.
12. Groundwater setback distance (depth) assumes unsaturated flow and is defined as the vertical distance from the base of the land application systems to the highest seasonal water table level. To minimise potential for adverse impacts on groundwater quality, minimum setback distances should ensure unsaturated, aerobic conditions in the soil. These minimum depths will vary depending on the scale of site constraints identified in Table R2. Where groundwater setback is insufficient, the ground level can be raised by importing suitable topsoil and improving effluent treatment. The regulatory authority should make the final decision in the instance. (See also the guidance on soil depth and groundwater clearance in Tables K1 and K2.)

Appendix 4. Table 2.4 – Buffer distances (from ‘*Designing and Installing On-site Waste water Systems*’ (SCA, 2012))

Design and Installation of On-site Wastewater Systems



Table 2.4 – Buffer distances (after Table 5.5 ‘Silver Book’ (DLG, in draft))

Feature	Level of effluent treatment	Effluent application method	Buffer distance	Achievable
Buildings, retaining walls	Primary	Subsoil	2.0 m downslope and where flat, or 4.0 m upslope	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Secondary (disinfected)	Subsurface and surface (including drip or trickle) irrigation	6.0 m	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Premises boundaries, paths and walkways, recreation areas	Primary	Subsoil	3.0 m downslope and where flat, or 6.0 m upslope	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Secondary (disinfected)	Subsurface irrigation	2.0 m downslope and where flat, or 4.0 m upslope	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
		Surface irrigation	6.0 m up- or downslope	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
In ground potable water tanks, in ground swimming pools	Primary	Subsoil	15.0 m	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Secondary (disinfected)	Subsurface and surface irrigation	15.0 m - should not be located upslope of feature	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Permanent and intermittent watercourses	Primary	Subsoil	100 m from the high water level; 150 m to a SCA named river*	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Secondary (disinfected)	Subsurface and surface irrigation	100 m from the high water level; 150 m to a SCA named river*	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Bore or well used for domestic [^] consumption	Primary	Subsoil	100 m from the high water level	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Secondary (disinfected)	Subsurface and surface irrigation	100 m from the high water level	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Dam and drainage depression	Primary	Subsoil	40 m from the high water level	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
	Secondary (disinfected)	Subsurface and surface irrigation	40 m from the high water level	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

* SCA named rivers include: Wingecarribee, Nattai, Nepean, Coxs, Wollondilly, Kangaroo, Shoalhaven, Mongarlowe and Tarlo for the full length as defined on the topographical maps, and the Mulwaree River upstream as far as the Braidwood Road Crossing. Reference must be made to the SCA NorBE Assessment Guideline (SCA, 2011).

[^] If within 100 metres of a bore or well used for domestic consumption, a draw-down analysis done using an appropriate methodology, such as Cromer, Gardner and Beavers, 2001 ‘An improved viral die-off method to estimate setback distances’ is required.

Appendix 5. OSSM System Risk Assessment Matrix

RISK ASSESSMENT FACTORS	Level of risk			COMMENTS
	HIGH	MEDIUM	LOW	
Land area	<5000m ² OR No reserve area identified 25	5000m ² -2 ha 10	>2 ha 0	
Distance from waterbodies	<40 m to drainage depression/dam/intermittent watercourse OR < 100 m to permanent waters 20	40-100 m to drainage depression/dam/intermittent watercourse OR 100-200m from permanent watercourse 10	>100m to drainage depression/dam/intermittent watercourse OR >200m from permanent watercourse 0	
Soil type	Category 1,5 and 6 25	Category 4 10	Category 2 and 3 0	
Potential occupancy of dwelling (no. bedrooms)	>4 bedrooms OR 3 bedrooms + serviced shed or studio 20	3-4 bedrooms 10	< 3 bedrooms 0	
Slope	Steep >20% 20	Undulating/ slope 10%-20% 10	Flat – up to 10% 0	
Nearest bore	<100m with draw down analysis resulting in a required setback distance <50 m 15	<100m with draw down analysis resulting in a required setback distance >50 m 5	>100m 0	
Proximity to human activity (house/recreational lawn, etc)	<6m 15	6-20m 10	20m+ 0	
System type appropriate for site (giving consideration to any risk mitigation measures implemented – e.g. high level alarms on collection wells) <i>Note: Effluent pump-out systems considered high risk regardless of mitigation measures</i> 20		10	0	
Pump used to convey effluent upslope to effluent management area	Primary treated effluent with no high level alarm on holding tank 15	Primary treated effluent with high level alarm on holding tank OR Secondary treated effluent 10	Effluent not pumped upslope 0	
Other Considerations (e.g. variations to Council's OSSM CoP)				
TOTAL SCORE				
OVERALL RISK RATING				
>80 = HIGH RISK 20-80 = MEDIUM RISK <20 = LOW RISK				