

ONSITE WASTEWATER MANAGEMENT PLAN 2025-2029



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Executive Summary

The *City of Ballarat's Onsite Wastewater Management Plan (OWMP) 2025–2029* builds on prior efforts to manage domestic wastewater in unsewered areas, with a strong emphasis on protecting human health, water quality, and the environment, particularly within five Special Water Supply Catchments (SWSCs). The city overseas approximately 3,171 onsite wastewater management systems (OWMS), using a risk-based, data-informed approach that prioritizes areas of highest concern.

The City of Ballarat, through the implementation of the 2019-2024 DWMP achieved a number of objectives and strategies, including:

Inspections Achieved (2019–2024)

Significant inspection and compliance work has been undertaken:

- **Special Water Supply Catchments (SWSCs):**
 - 404 OWMS identified.
 - 56 inspections conducted.
 - 5 high-risk and 20 medium-risk systems were initially identified.
 - All high-risk systems have been rectified; 4 medium-risk systems remain to be rectified.
- **Declared Sewer District (DSD):**
 - 420 OWMS identified.
 - 64 inspections conducted.
 - 4 high-risk systems identified; 2 systems upgraded.
 - 9 medium-risk systems identified.
- **Outside SWSC and DSD:**
 - 2,347 systems identified.
 - 142 inspections conducted.
 - 7 high-risk systems identified; 2 systems upgraded.
 - 24 medium-risk systems identified; one downgraded to lower risk after remedial work.
- **Geospatial Data System:**
 - Enhanced data on OWMS capturing location, age, treatment type, lot size, soil/topography, proximity to water sources, and potential environmental risks.
 - Used to guide inspections, planning decisions, and compliance actions.
- **Stakeholder Education:**
 - Information materials, fridge magnets, and stickers distributed to raise awareness.

- QR codes link users to online education tools.

The identified strategies for this plan (2025-2029) include:

1. Explore options for additional funding to resource implementation.

- Explore funding options external to the City of Ballarat budget such as state government grants as they become available.

2. Risk-Based Inspection in SWSCs

- Maintain routine inspections, especially for older systems and those near waterways, to manage non-compliant systems. Seek endorsement from Central Highlands Water for the plan.

3. Database of Section 173 Agreement Properties

- Create a database to track properties bound by inspection/reporting requirements under the Planning and Environment Act to facilitate ongoing compliance.

4. Re-assess Nine Historical OWMS Clusters in the DSD

- Inspect identified OWMS in key suburbs (e.g., Mount Helen, Buninyong, Redan) located within or adjacent the DSD to explore viable solutions for failing systems and to inform future sewerage infrastructure planning, including connection to reticulated sewerage system where feasible.

5. Enhance Occupier Awareness

- Expand education outreach, particularly within the SWSC and DSD focusing on maintenance responsibilities and how to respond to system failure.

Introduction

Ballarat is a large inland city with a population numbering 121,050 as of 2024. Ballarat sits within the Central Highlands of the Great Dividing Range and is at the head of several special water supply catchments which drain to reservoirs used for potable (drinking) water.

The population of Ballarat is distributed as follows:

Urban	69%
Rural residential	18%
Rural	13%

Councils have a legislative responsibility to protect the health of residents, visitors and those working in the municipality; this is recognised in the Council Plan. The Department of Energy, Environment and Climate Action (DEECA) and the Environment Protection Authority (EPA) play a lead role in the strategic management of domestic wastewater in Victoria. On-site domestic wastewater needs to be managed to protect the environment and human health.

Section 156 of the *Environment Protection Act 2017* makes the Order for Obligations of Managers of Land or Infrastructure (Urban Stormwater Management and On-Site Wastewater Management) for the purposes of minimising risks of harm to human health or the environment from pollution or waste. Under Part 3, Clause 6(1) – Onsite Wastewater Management, councils are required to develop an on-site wastewater management plan which so far as reasonably practicable:

- (a) identifies risks of harm to human health and the environment from unsewered allotments in its municipal district.
- (b) identifies and assesses the risks of harm to human health and the environment associated with existing and future on-site wastewater management systems in its municipal district, including but not limited to:
 - (i) the cumulative risks of existing on-site wastewater management systems that are discharging, or may in the future discharge, wastewater beyond allotment boundaries; and
 - (ii) the risks of on-site wastewater management systems that are impacting, or may in

the future impact, on groundwater or surface water.

(c) identifies actions with implementation timeframes to:

- (i) minimise the risks identified in paragraphs 1(a) and (b); and
- (ii) prevent discharge of wastewater beyond allotment boundaries; and

(d) sets out the council's approach to compliance and enforcement.

The City of Ballarat have special water supply catchments which have specific restrictions on development as described in the Minister's Guidelines for Planning Permit Applications in Open, Special Water Supply Catchment Areas (2024). In the absence of an OWMP endorsed by Central Highlands Water, new dwellings within the catchment are restricted to a density of one dwelling per 40 hectares.

There are five special water supply catchments within the City of Ballarat. These catchments are areas of land from which the surface water drains to reservoirs used for supplying drinking water. In the case of Learmonth, the catchment area relates to a water supply bore located on Bankin Hill within the township. The number of systems within these catchments is shown in Table 1, and the location of the catchments mapped in Figure 1. These special water supply catchments are treated with the highest degree of caution when planning for onsite wastewater management systems due to the potential for human pathogen transmission from wastewater into the drinking water supply system.

Special Water Supply Catchments	Number of OWMS
Tullaroop	246
Learmonth Bore field	82
Lal Lal	37
Evansford	32
Ballarat	7
Total	404

Table 1: Number of OWMS within special water supply catchments.

Special Water Supply Catchments

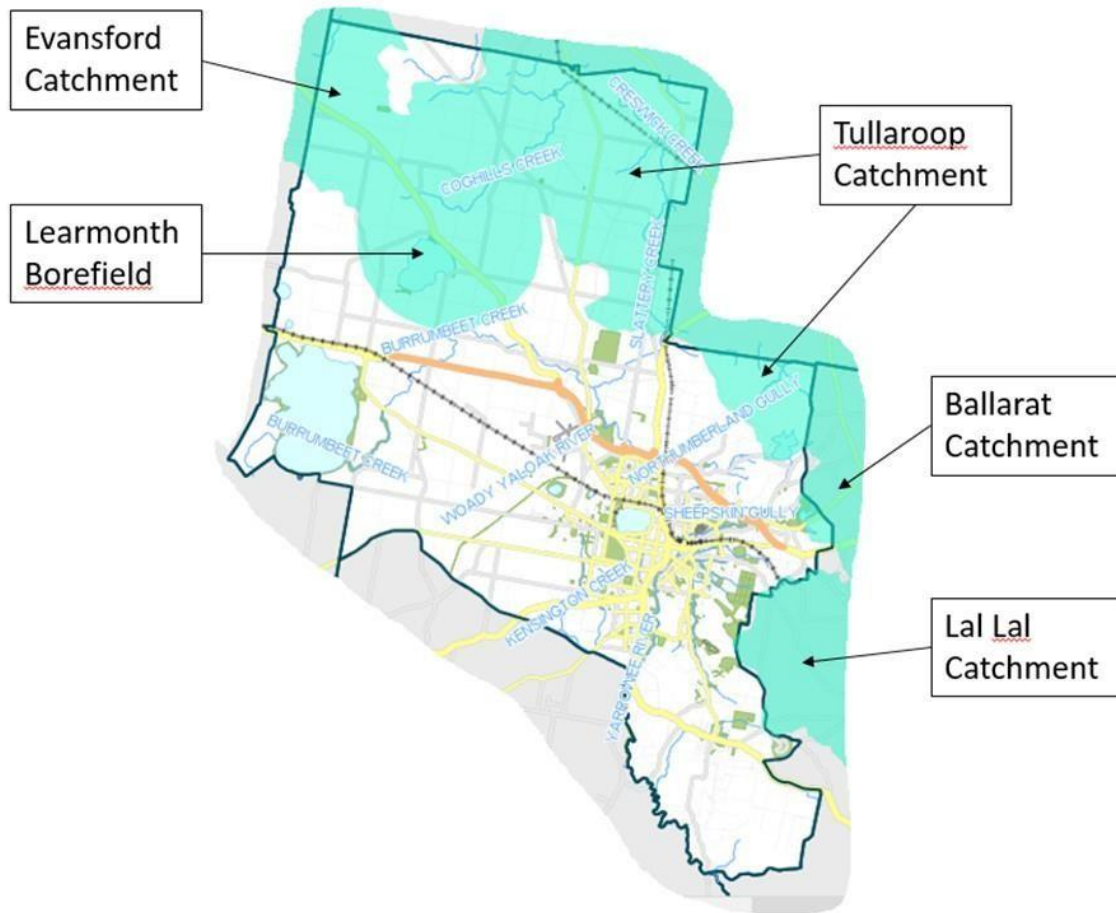


Figure 1: Location of the five special water supply catchments.

Risks associated with domestic wastewater

Domestic wastewater is typically high in nutrients and human pathogens. A summary of the risks is presented below:

Type of risk	Risk
Public health	Drinking water sources polluted with bacteria, nitrates and phosphorous, resulting in stomach upsets, diarrhoea and more serious illnesses Recreational waterways and other water bodies polluted, thus placing at risk people who come into contact with polluted water through recreational pursuits
Environmental	Prolific weed growth and destruction of indigenous vegetation Polluted surface waters (such as creeks, waterways and drains) Polluted groundwater Harm to aquatic fauna (such as fish and macroinvertebrates)
Amenity	Smell, unsightly discharges and seepage leading to reduced amenity and reduction in property values

Table 2: Summary of risks posed by domestic wastewater (from p.37 Victorian Auditor-General's Office report: "Protecting our environment and community from failing septic tanks" 2006)

Legislation and Standards

Environment Protection Act 2017

The Act provides the authority for Councils to issue permits for installing, altering and using OWMS. It also provides a means for managing failing systems through enforcement.

Victorian Government Gazette: Obligations of Managers of Land or Infrastructure (Urban Stormwater Management and On-Site Wastewater Management)

Section 156 of the *Environment Protection Act 2017* makes the *Order for Obligations of managers of land or infrastructure (Urban stormwater management and On-site wastewater management)* for the purposes of minimising risks of harm to human health or the environment from pollution or waste.

Supporting documents produced by the Environment Protection Authority and Municipal Association of Victoria to assist onsite wastewater professionals, councils and other regulators, water corporations, property owners and occupiers are the '*Guidelines for onsite wastewater management*' (2024), '*Guidelines for effluent dispersal and recycling systems*' (2024) and the '*Victorian Land Capability Assessment Framework*' (2014).

Public Health and Wellbeing Act 2008

The objective of the *Public Health and Wellbeing Act 2008* is to impose a duty on Councils to achieve the highest attainable standard of public health and wellbeing by investigating and remedying conditions that

are liable to be dangerous to health or offensive, by:

- Protecting public health and preventing disease, illness, injury, disability or premature death
- Promoting conditions in which persons can be healthy

Building Act 1993

The *Building Act 1993* and *Building Regulations 2018*, require that the report and consent of the relevant Council must be obtained for an application for a building permit that requires the installation or alteration of an onsite wastewater management system.

Planning and Environment Act 1987

The key legislation relating to land development in Victoria is the *Planning and Environment Act 1987* (“*P & E Act*”). The two objectives of the planning framework under the *P & E Act* are:

- To enable land use development and planning policy to easily integrate with environmental conservation and resource management policies
- To ensure that the effects on the environment are considered when decisions are made about the use and development of land

The *P & E Act* requires that all land use and development take place in accordance with the planning scheme for the municipal district. Land within special water supply catchments are subject to an Environmental Significance Overlay 3 (ESO3) under the *Ballarat Planning Scheme* which has specific requirements for protecting water quality within the catchment.

Clause 66.02-5 of the *Victoria Planning Provisions* identifies water supply authorities as a determining referral authority for permit applications within a special water supply catchment. This applies to permits to use, subdivide, consolidate, construct a building or carry out works or to demolish a building or works. This means CHW can object to a planning permit application and Council must refuse to issue a permit. Alternatively, CHW has the power to impose conditions on the planning permit.

Minister’s Guidelines for Planning Permit Applications in Open, Special Water Supply Catchments, 2024

The guidelines direct responsible authorities in their assessment for planning permit applications for development of land within open, special water supply catchments in Victoria.

Density provisions may be relaxed subject to a suitable Onsite Wastewater Management Plan being in place that manages the risk to the catchments posed by onsite wastewater management systems. The suitability of an OWMP includes:

- effective monitoring of the condition and management of onsite wastewater management

systems,

- Acting where non-compliances are identified,
- Ensuring the implementation of the OWMP is suitably resourced, including monitoring and enforcement activities.

Water Act 1989

Section 180 of the *Water Act* requires Councils to refer applications for a permit to install an OWMS within a declared sewerage district if the relevant water corporation has issued a standing written request. CHW has issued such a request to the City of Ballarat.

Section 147 of the *Water Act* empowers water corporations to direct an owner of a serviced property to connect to the reticulated sewerage system for the disposal of wastewater. This process is relevant where site constraints are difficult to overcome and connection to the reticulated sewerage system is seen as the most sustainable solution for failing systems.

Australian Standards

Australian Standards have relevance to the construction and design of OWMS. The EPA Victoria requires that systems meet these standards, and where appropriate hold a certificate of conformance as part of the approval process. The primary standards and guidelines with respect to OWMS system design include:

- AS/NZS 1547:2012 – On-site Domestic Wastewater Management
- EPA Victoria – Guideline for onsite wastewater management (GOWM)
- EPA Victoria - Guideline for onsite wastewater effluent dispersal and recycling systems

Further relevant standards include:

- AS/NZS 1546.1:2008 – On-site Domestic Wastewater Treatment Units – Part 1: Septic Tanks
- AS/NZS 1546.2:2008 – On-site domestic wastewater treatment units – Part 2: Waterless composting toilets
- AS/NZS 1546.3:2017 – On-site Domestic Wastewater Treatment Units –Part 3: Secondary treatment systems
- AS/NZS 1546.4:2016 – On-site domestic wastewater treatment units – Part4: Domestic greywater treatment systems
- AS/NZS 3500.1: 2025 Plumbing and drainage, Part 1: Water Services
- AS/NZS 3500.2: 2025 Plumbing and drainage, Part 2: Sanitary Plumbing and Drainage
- AS/NZS 3500.3: 2025 Plumbing and drainage, Part 3: Stormwater drainage
- AS/NZS 3500.4: 2025: Plumbing and drainage, Part 4: Heated water services.

OWMP stakeholder engagement

The City of Ballarat have produced the draft OWMP (2025-2029) which will be made available to stakeholders for feedback to help shape the plan. A questionnaire has been developed to guide conversation and feedback. The plan will be open for comment via the City of Ballarat MySay website <https://mysay.ballarat.vic.gov.au/> and advertised through social media channels. A mail out to all properties with known OWMS will occur to facilitate key stakeholder response. Hard copies of the questionnaire are available upon request.

Central Highlands Water Authority is a key stakeholder having responsibility for the protection of the special water supply catchments and management of sewerage infrastructure. The public consultation period will open for a 4-week period.

Additional key stakeholders include:

1. Central Highlands Water (CHW)
2. Owners or users of OWMS
3. Corangamite Catchment Management Authority
4. North Central Catchment Management Authority
5. Glenelg Hopkins Catchment Management Authority
6. Environment Protection Authority (EPA)
7. Department of Energy, Environment and Climate Action (DEECA)
8. Goulburn Murray Water

OWMP implementation

Implementation of the plan will be undertaken in accordance with the level of resourcing available. The objectives of the plan will be prioritised to focus on properties located within the special water supply catchments and failing OWMS within the declared sewerage district, particularly the 9 historical clusters of systems identified.

OWMP audit and review

The implementation of the OWMP will include progress reports and a periodical review and update of the plan every 5 years.

Findings and outcomes from the 2019-2024 OWMP

The current situation with domestic wastewater in Ballarat is summarised below.

Approximately 3,171 OWMS records documented on City of Ballarat's Geographic Information System.	→ SWSC 56 inspections undertaken within the SWSC. Five high-risk systems and 20 medium-risk systems previously identified. Works were undertaken resulting in no high-risk systems remaining and 4 medium-risk systems remaining to be upgraded/rectified.
→ DSD 64 inspections undertaken in the DSD. Four systems identified as high-risk with two of these systems being subsequently upgraded. Nine medium risk systems have been identified.	→ OWMS outside SWSC and DSD. 142 inspections undertaken. Seven high-risk systems identified resulting in two systems being upgraded. 24 medium-risk systems identified with works undertaken to one system reducing the risk rating to minor.
→ 404 OWMS in the special water supply catchments (SWSC) Following on from the City of Ballarat's implementation of the previous onsite wastewater management plan, five high-risk systems and 20 medium-risk systems were identified within the SWSC. Implementation of the plan has resulted in 56 inspections and works being undertaken to identified high risk and medium risk systems. As a result of remedial works there are currently no high-risk systems identified within the SWSC and only four medium risk systems remaining to be upgraded/rectified. To date all OWMS within special water supply catchments have been inspected and mapped.	
→ 420 OWMS in the declared sewer district (DSD) There have been 64 inspections undertaken identifying four high risk systems of which two of these systems have had works to upgrade performance. Nine medium-risk systems identified as requiring works to improve system performance. The number of OWMS within the DSD remains fluid as the DSD expands to include urban growth zones and large-scale subdivisions. There remain nine historical clusters within or adjacent the DSD with failing OWMS which need to be revisited to ascertain contemporary information which will shared be with shared with CHW to inform future sewerage infrastructure planning.	

2,347 OWMS outside SWSC and DSD

Systems located outside the SWSC and DSD are not considered as high a priority as those within, however, they still present a risk to the environment or human health if failing to retain wastewater onsite. As these systems are identified through voluntary upgrades, enquiries from prospective property purchasers and complaints, City of Ballarat will continue to work towards rectifying non-compliant systems. Data for these systems can be improved overtime with onsite inspections. 142 inspections were undertaken outside the SWSC and DSD identifying seven high-risk systems of which two of these systems have since been upgraded. 24 medium-risk systems were identified with works being undertaken to one system reducing its risk rating to minor.

→ Geospatial Information System (GIS)

A Geospatial Information System has been redesigned utilising data sets based on Department of Energy, Environment and Climate Action risk assessment framework for OWMS. Datasets include:

- The location of each OWMS.
- The age of installed OWMS.
- The type of each system (Primary and Secondary treatment systems).
- Lot sizes (<0.4ha).
- Soil types.
- Topography.
- OWMS proximity to water courses, flood plains, bores and groundwater tables.
- OWMS proximity to the potable water supply offtakes.

The geospatial information system is used when assessing new OWMS applications, reviewing land capability assessments, identifying high-risk systems within special water supply catchments, monitoring system densities and to assist investigations of complaints regarding failing OWMS. The data informs a targeted inspection regime for high-risk systems as part of the implementation of the OWMP. At a broader level the City of Ballarat can use the data to assist with future planning decisions.

→ Stakeholder education

Stakeholder education is critical to effective management for OWMS and key to preventing system failure in the first instance. Occupier awareness is a barrier to be overcome. Educating these key stakeholders aims to facilitate proactive management of OWMS.

Education materials (information pack) have been produced covering wastewater treatment plants and conventional septic tank systems with key responsibilities and management information. These education materials are provided with all new system installations, alterations and as part of routine monitoring activities. They are also accessible on the City of Ballarat website.

Magnets and stickers have been produced to identify properties serviced by OWMS. They are intended to be displayed directly on OWMS and occupants can display the fridge magnets as a

constant reminder. The magnets and stickers are linked via a QR code to the education materials located on the City of Ballarat website.

In 2018, City of Ballarat estimated 3,146 operational OWMS. As result of data cleansing and inspections current records reflect approximately 3,171 operational systems within the municipality. Of these systems, 404 are in special water supply catchments (SWSC) and 420 located within Central Highlands Water declared sewerage district (DSD).

City of Ballarat continue to work with property owners to facilitate system upgrades and replacements when failures have been identified. This has resulted in reduction in the number of failing systems within the special water supply catchments. Special water supply catchments remain an ongoing focus for the plan.

Within or adjacent to declared sewerage districts nine historical clusters of properties with OWMS remain. Most systems are on properties with small block sizes making it difficult to manage all wastewater onsite. The ideal long-term solution for these properties is for the provision (extension) of the reticulated sewerage system. This would lessen the costs incurred by property owners for connection. Costs for connecting to the reticulated sewerage system are a major barrier for homeowners. Difficult topography also creates engineering challenges for connection increasing costs. The closer sewerage connection points are located to properties, the more cost effective it becomes for homeowners facilitating voluntary buy-in.

Reticulated sewerage infrastructure planning needs to consider existing stocks of OWMS, particularly within or on the boundary of towns and regional cities. These zones often contain higher population densities combined with smaller block sizes amplifying risks to human health and the environment. The extension of the reticulated sewerage system provides options for connecting failing or aged OWMS and for new developments (dwellings). Data sharing, particularly contemporary data with Central Highlands Water Authority will better inform strategic sewerage infrastructure planning. This requires a strategic inspection and mapping program for the DSD.

Anecdotal evidence suggests a key barrier to building sewerage infrastructure is distributing the capital cost obligations in an equitable manner. It is difficult to broker voluntary agreements between a mix of existing households with varying economic means and varying Levels of septic system performance. Property developers will generally seek to minimise construction costs. Understandably, what has been observed in practice is each party acts in their own economic interest. They often seek to avoid making payment (which can be considerable), even when they gain benefit from the group provision of sewerage infrastructure. Other parties are simply unable to afford to pay for a sewerage infrastructure proposal scheme and the matter never progresses.

Information sharing and working collaboratively with Central Highlands Water Authority can inform

targeted planning for reticulated sewerage infrastructure. Given contributory costs by property owners for connection can exceed \$20,000, paying up-front can be financially prohibitive for many households. An equitable approach to facilitate household connection would be to provide an opportunity to pay these costs over time. The Water Industry Act 1994 references an option for a 20-year payment period for the provision of reticulated sewerage services. This is outside the authority of the City of Ballarat which understands there are implications for tracking and recouping costs over a 20-year payment period. However, this option would breakdown costs over longer period potentially making it more palatable for stakeholders to buy in.

Strategy 1: Explore funding options to resource the implementation of the OWMP.

Income derived from statutory fees and charges for OWMS management (permits) do not provide for full-service cost recovery and to fully resource the implementation of the plan. Whilst there is a commitment to implement this plan using existing resources. Future funding opportunities will be explored from State government bodies as grants become available to assist the implementation.

City of Ballarat made a significant investment for the 2013-18 OWMP, employing a full-time project officer for approximately two and a half years at a cost more than \$200,000. This funding came from general revenue. The OWMP provided benefit to those landowners within special water supply catchments as the plan was endorsed by CHW on 13 February 2017. This enabled the development of suitable lots which had previously been restricted. The broader community benefited by reducing the risk of pollution to potable water resources as failing systems were proactively identified and subsequently remedied.

Strategy 2: Obtain CHW endorsement of the Plan by implementing a risk-based inspection program for OWMS within special water supply catchments.

All OWMS (404) located within special water supply catchments have now been inspected and mapped. High risk failing systems have had works undertaken reducing their risk to the environment and human health. The works have included alterations to systems or complete system replacement. There remain approximately 18 low risk OWMS that require upgrades to ensure all wastewater is contained (managed) onsite. A base level of inspections will be conducted on systems posing an elevated risk. These are generally systems located in closer proximity to watercourses and drain to the catchment reservoirs. Systems older than 15 years are also considered to pose a higher risk for failure.

Strategy 3: Develop a data base for properties in the SWSC with Section 173 Agreements to facilitate ongoing inspection & reporting requirements.

A number of properties within special water supply catchments have Section 173 agreements on their property titles stipulating their OWMS is to be inspected and reported every 12 months. The City of Ballarat will work collaboratively with Central Highlands Water to establish a database of these properties to facilitate the annual inspection and reporting requirement.

Strategy 4: Inspect OWMS located in the 9 historical clusters in (or adjacent) the DSD. Information will be feedback to CHW to inform future sewerage infrastructure planning.

There are nine identified historic clusters of OWMS within or adjacent the DSD located in the following suburbs:

1. Mount Helen,
2. Buninyong,
3. Nerrina,
4. Cardigan,
5. Nerrina,
6. Mount Pleasant,
7. Black Hill,
8. Redan, and
9. Canadian.

An assessment of these systems will provide valuable and contemporary information regarding system performance, and the collective impact the systems are posing to the environment and human health. The information will identify priority systems requiring works and can inform future sewerage infrastructure planning. Properties unable to retain all wastewater onsite due to site limitations means connection to the reticulated sewerage system is the preferred long-term sustainable solution. This will require a collaborative approach between City of Ballarat and Central Highlands Water Authority.

Strategy 5: Increase owner/occupier awareness for properties serviced by OWMS; responsible management and what to do when failure has occurred.

Occupiers of properties with OWMS need to be aware of their responsibilities and understand how to effectively manage their system. Educating these key stakeholders can prevent system failure in the first instance but also inform what actions to take when a system has failed.

The following educational materials are provided with all new applications for installations and alterations of OWMS. They will be provided during the implementation the plan through compliance (monitoring) and complaint inspection. A staged mailout should be considered for properties within SWSC and the DSD. Resources permitting, an extended mail out to all properties with OWMS should be considered.

Educational Materials

Fridge Magnets and Stickers



INFORMATION SHEETS

Septic Tank System



A Guide for Home Owners and Occupiers

Onsite Wastewater Management Systems (OWMS) are designed to treat the sewage generated at your property from bathrooms, kitchens and toilets etc for safe disposal within your property boundary for the protection of the occupiers health (public health) and the environment.

As a landowner, occupier or renter with an OWMS you have legal obligations under the *Environment Protection Act 2017* and accompanying Regulations which create the General Environmental Duty (GED) applicable to all Victorians.

These responsibilities include:

- operating the system correctly,
- making sure it does not overflow,
- maintaining the system in good working order (this does not apply to renters), and
- notifying the City of Ballarat as soon as is practical if there is a problem with the system.

In addition, Landowners must also:

- provide written information about how to use the system to the person in management or control of the system (for example a renter), and
- keep maintenance records (and provide them to City of Ballarat upon request).

There are two types of systems:

Primary treatment systems (septic tank or worm farm, with wastewater discharging into absorption trenches) or a Secondary treatment system (wastewater treatment plant or sand filter, with wastewater discharging into subsurface irrigation lines or absorption trenches).

Check your City of Ballarat permit "Certificate to Use" or manufacturer's instructions to see which system is installed and any maintenance requirements. Alternatively, contact City of Ballarat Environmental Health Unit for further information.

How to look after your Onsite Wastewater Management System to prevent failure:

- Refer to manufacturer's instructions and any maintenance requirements. Servicing requirements may also be found on the EPA compliance certificate for the system.
- Use only reputable, suitably qualified service technicians for servicing maintenance. Keep service records as City of Ballarat may request them.

In the house

- Don't connect a spa or swimming pool to your system if it has not been designed to take the hydraulic loading and approved by City of Ballarat.
- Restrict the use of germicides (such as disinfectants & bleaches) as they will kill the microorganisms (microflora) in the system which break down (decompose) the solids and domestic waste produced.
- Use detergents that are low in salts, phosphorus and chlorine.
- Don't flush nappies, cotton buds, sanitary napkins or condoms down the toilet as they cannot be processed by the system and will cause failure.
- Minimise the amounts of oils and fats discharged to the septic system (i.e. flushed down the kitchen sink).
- Use a sink strainer to limit food scraps being flushed into your septic system.
- Avoid overloading the system by spacing out water usage (i.e. by using the washing machine at different times to the dishwasher. Alternatively, install water saving fixtures).

In and around the septic tank and on the wastewater disposal field (absorption trenches)

- Ensure no structures, pavements, driveways, patios etc are built over the septic tank or the wastewater disposal field.
- Restrict heavy livestock, vehicles and machinery from accessing the wastewater disposal field.

- Only plant grasses or shallow rooted salt and nutrient tolerant plants near the system. Roots from larger plants may damage or compromise the onsite wastewater management system including the wastewater disposal field.

How to detect system failure "warning signs"

- sewer like odour coming from the system and/or wastewater disposal field (including wastewater distribution pits).
- toilets and sinks drain very slowly,
- blocked fixtures with sewerage flowing from the overflow relief gully,
- wastewater surfacing (pooling) near the disposal lines,
- presence of dead or dying vegetation or lush green growth downslope of the wastewater disposal field,
- inspection pits and/or wastewater disposal lines consistently exhibiting high water levels, or
- general waterlogging around the wastewater disposal field



What to do when your system has failed?

- Check when your septic tank was pumped out last, it should be done at least every three years
- Contact your local plumber or City of Ballarat Environmental Health Unit on 5320 5500 for advice and required action.

ballarat.vic.gov.au



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Wastewater Treatment Plant



A Guide for Home Owners and Occupiers

Onsite Wastewater Management Systems (OWMS) are designed to treat the sewage generated at your property from bathrooms, kitchens and toilets etc for safe disposal within your property boundary for the protection of the occupiers health (public health) and the environment.

As a landowner, occupier or renter with an OWMS you have legal obligations under the *Environment Protection Act 2017* and accompanying Regulations which create the General Environmental Duty (GED) applicable to all Victorians.

These responsibilities include:

- operating the system correctly,
- making sure it does not overflow,
- maintaining the system in good working order (this does not apply to renters), and
- notifying the City of Ballarat as soon as is practical if there is a problem with the system.

In addition, Landowners must also:

- provide written information about how to use the system to the person in management or control of the system (for example a renter), and
- keep maintenance records (and provide them to City of Ballarat upon request).

There are two types of systems:

Primary treatment systems (septic tank or worm farm, with wastewater discharging into absorption trenches) or a Secondary treatment system (wastewater treatment plant or sand filter, with wastewater discharging into subsurface irrigation lines or absorption trenches).

Check your City of Ballarat permit "Certificate to Use" or manufacturer's instructions to see which system is installed and any maintenance requirements. Alternatively, contact City of Ballarat Environmental Health Unit for further information.

How to look after your wastewater treatment plant to prevent failure:

- Refer to manufacturer's instructions and any maintenance requirements. Servicing requirements may also be found on the EPA compliance certificate for the system.
- Use only reputable, suitably qualified service technicians for servicing maintenance. Keep service records as City of Ballarat may request them.

In the house

- Don't connect a spa or swimming pool to your system if it has not been designed to take the hydraulic loading and approved by City of Ballarat.
- Restrict the use of germicides (such as disinfectants & bleaches) as they will kill the microorganisms (microflora) in the system which break down (decompose) the solids and domestic waste produced.
- Use detergents that are low in salts, phosphorus and chlorine.
- Don't flush nappies, cotton buds, sanitary napkins or condoms down the toilet as they cannot be processed by the system and will cause failure.
- Minimise the amounts of oils and fats discharged to the septic system (i.e. flushed down the kitchen sink).
- Use a sink strainer to limit food scraps being flushed into your septic system.
- Avoid overloading the system by spacing out water usage (i.e. by using the washing machine at different times to the dishwasher. Alternatively, install water saving fixtures).

In and around the wastewater treatment tank and on the wastewater disposal field (subsurface irrigation system or absorption trenches)

- Ensure no structures, pavements, driveways, patios etc are built over the septic tank or the wastewater disposal field.

- Restrict heavy livestock, vehicles and machinery from accessing the wastewater disposal field.
- Only plant grasses or shallow rooted salt and nutrient tolerant plants near the system. Roots from larger plants may damage or compromise the onsite wastewater management system including the wastewater disposal field.

How to detect system failure "warning signs"

- sewer like odour coming from the system and/or wastewater disposal field (including wastewater distribution pits).
- toilets and sinks drain very slowly,
- blocked fixtures with sewerage flowing from the overflow relief gully,
- wastewater surfacing (pooling) near the disposal lines,
- presence of dead or dying vegetation or lush green growth downslope of the wastewater disposal field,
- inspection pits and/or wastewater disposal lines consistently exhibiting high water levels, or
- general waterlogging around the wastewater disposal field



What to do when your system has failed?

- Check when your system was last serviced.
- Contact your local plumber or City of Ballarat Environmental Health Unit on 5320 5500 for advice and required action.

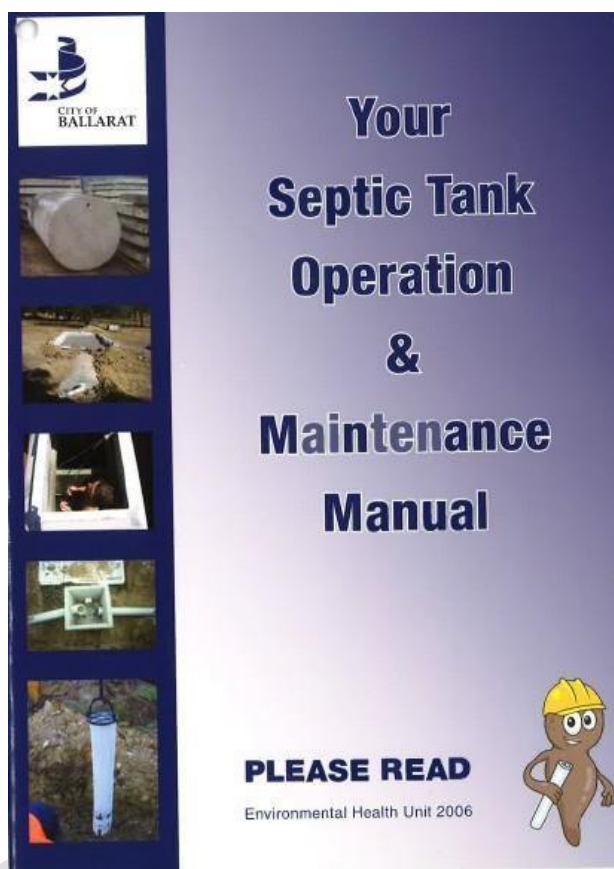
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Operation and Maintenance Booklet



Plan Implementation

Implementation of the plan will be resource dependant but will look to cover the below activities in some capacity.

1	Continue to explore funding options to resource the implementation of this plan.
2	Obtain CHW endorsement for the Plan by implementing a risk-based inspection program for onsite wastewater management systems within special water supply catchments
3	Develop a data base for properties within SWSC that have Section 173 Agreements (Planning & Environment Act) to facilitate ongoing Inspection & reporting requirements.
4	Inspect OWMS located in the nine historical clusters located in (or adjacent) the DSD to ascertain current system status and explore viable solutions for failing systems. This information will be feedback to Central Highlands Water Authority to inform future sewerage infrastructure planning.

5	Educate property owners/occupiers with OWMS on responsible management and maintenance requirements. Inform of actions to be taken in the event of system failure.
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Conclusion

Between 2019 and 2024, City of Ballarat made measurable progress in managing onsite wastewater systems through targeted inspections, stakeholder engagement, and data-driven risk assessments. The municipality has approximately 3,171 OWMS documented, with 404 in Special Water Supply Catchments (SWSCs), 420 within the Declared Sewer District (DSD), and 2,347 in other areas. Despite progress, ongoing issues contribute to system failure including lack of active management by owners/occupiers, aging systems (particularly in SWSC), clusters of failing OWMS on small-lots in the DSD and cost barriers to reticulated sewerage connection. Addressing these issues requires a coordinated and sustained approach involving planning, funding, and community engagement. Implementing the five strategies identified can help address these issues but will be resource dependant.

Appendix A: Communication Plan

The OWMP is referenced under Stakeholder Engagement on page 11. The new plan will be open for public comment for a 4-week period. A questionnaire has been developed to guide conversation and feedback for the draft plan. It will be made accessible via the City of Ballarat MySay website <https://mysay.ballarat.vic.gov.au/> and communicated via social media channels. A mail out to all properties with known OWMS will occur to facilitate key stakeholder responses. In addition, hard copies of the questionnaire will be made available upon request. Additional stakeholders such as Central Highlands Water Authority, Catchment Management Authorities, Department of Energy, Environment and Climate Action (DEECA) and the Environment Protection Authority (EPA) will be contacted directly for submissions. All feedback will be collated, analysed and considered when finalising the plan.

OWMS educational resources have been developed and are available online via the City of Ballarat website. Education materials will be actively distributed when processing OWMS applications and through routine monitoring and compliance activities.

Appendix B: Recommendations specific to Ballarat

Reserve land application area	The City of Ballarat supports the principle that all unsewered allotments should have a reserve wastewater disposal field/land application area (LAA) set aside for future use. The purpose of having a reserve area is to allow a factor of safety against unforeseen malfunction or failure. This can arise due to an increase in household occupancy or inadvertent misuse of the system. The reserve land application area makes it possible to increase the size of the house in the future. On newly created allotments a reserve land application area should be nominated at the subdivision stage for all allotments under 1 ha (10,000m²) in size. The requirement for a reserve land application area is supported in AS/NZS 1547:2012.
Irrigation Systems	AS/NZS 1547:2012 requires irrigation systems to be constructed to avoid the likelihood of blockage. For this reason, the following components should be included in an irrigation system. • In-line filters to minimise the discharge of suspended solids to the land application system • Vacuum breakers to prevent the ingress of soil • Flush valves to allow periodic cleaning/flushing of the system. The installation of an in-line filter creates a responsibility for homeowners to regularly clean and maintain. Failure to clean an in-line filter may have a detrimental effect on any pump system installed.

	Irrigation systems should be constructed using pressure compensating, sub-surface irrigation pipework that evenly distributes effluent throughout the irrigation area. It is important to ensure that any pump used in the distribution of wastewater is designed to suit the irrigation network. It may be necessary to increase the size of an irrigation field when proposing to split the irrigation system for alternate dosing.
Water Rotors	Water rotor valves have been found to be unreliable to the extent that some property owners have been found to have undertaken unauthorised alteration to their irrigation system by removing a problematic water rotor. For this reason, the City of Ballarat does not support the installation of water rotor valves on irrigation systems due to the likelihood of failure and subsequent overloading of sections of an irrigation system.
Absorption trench system	• Minimum Septic Tank capacity 3000L (concrete tank) • 100mm sewer pipe from dwelling to Septic tank • 90mm PVC pipe from Septic Tank to Distribution Boxes • Distribution Boxes made from concrete or HDPE • Aggregate in absorption trenches – blue metal or clean Scoria, 20-40mm • Geotextile cloth or woven weed mat over aggregate • Trench capping – loam or site topsoil
Mound system	• Imported soil or approved sand • Design as per technical drawing or LCA
Aerated Wastewater Treatment System (AWTS)	• Current EPA Certificate of Conformance • Visual/Audible alarm to alert to system failure
Subsurface Irrigation (for Secondary treated wastewater only)	• Pressure compensating pipework: Toro, Wasteflow, or similar • Inline filter • Vacuum breaker with a surface box • Flush out valve with a surface box