

ONSITE WASTEWATER MANAGEMENT PLAN

2025-2029

Proudly working
with and for
our community



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Introduction

The City of Ballarat's Onsite Wastewater Management Plan (OWMP) 2025–2029 has been developed in consultation with the community and key stakeholders. The plan is a strategic document that builds on prior efforts to manage domestic wastewater in unsewered areas with a strong emphasis on protecting human health, water quality, and the environment. Within the City of Ballarat there are approximately 3,171 onsite wastewater management systems (OWMS).

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 supplies.

City of Ballarat

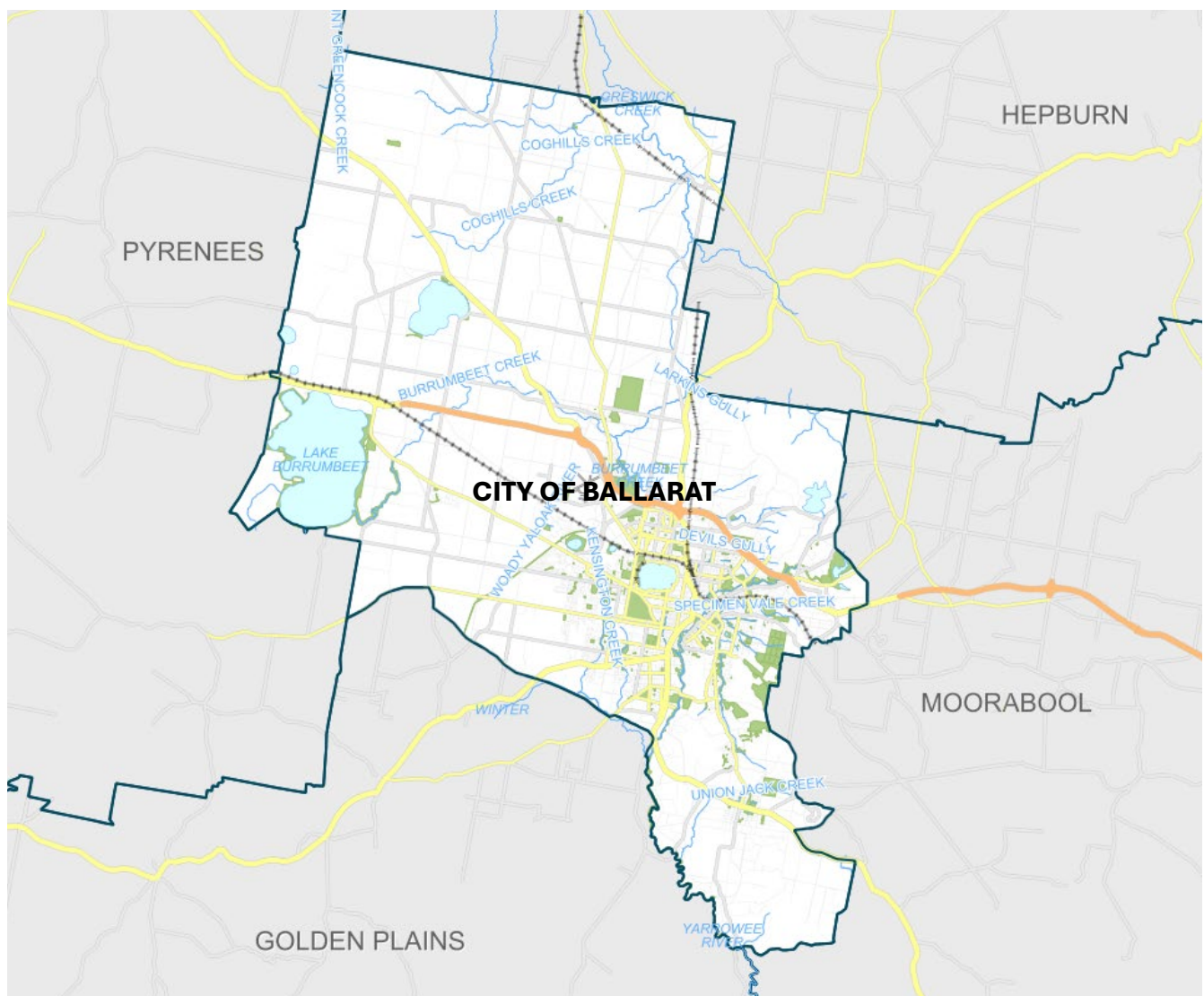


Figure 1. Map of the City of Ballarat.

The population of Ballarat is distributed as follows:

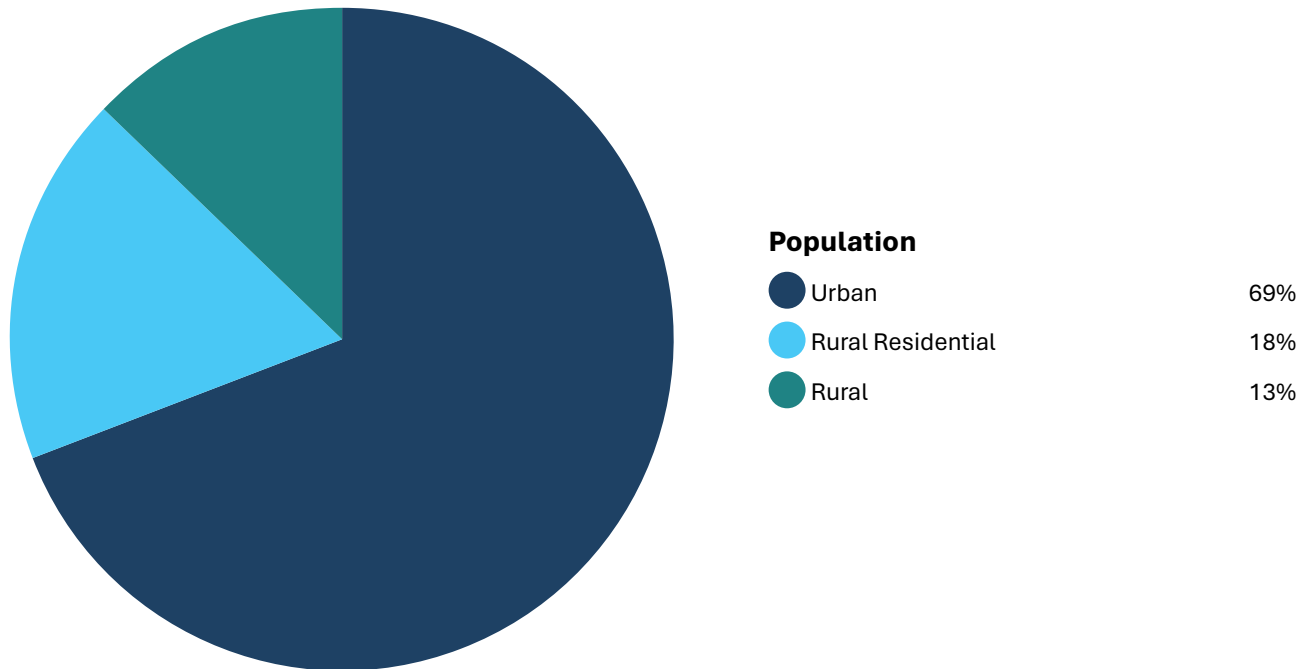


Figure 2. Population distribution in Ballarat.

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.

Community Consultation

The purpose of consulting with the community and key stakeholders during the review of City of Ballarat's Onsite Wastewater Management Plan (OWMP) is to ensure the plan is practical, effective, equitable, and supported by those it impacts. This collaborative approach helps councils meet regulatory requirements while addressing local needs.

The consultation period ran for 30 days in September 2025. The community were invited to participate in the consultation process via the online MySay Ballarat website. 3170 properties were identified as having a septic tank and were sent a mailout to encourage participation. Hard copies of the questionnaire were made available upon request and the City of Ballarat used social media channels to encourage participation. Industry key stakeholders were contacted directly for feedback and included Central Highlands Water, Environment Protection Authority, Department of Energy, Environment and Climate Action (DEECA), Catchment Management Authorities and installers of septic tanks (i.e. plumbers).

Community Feedback

Residents expressed concern toward the proposed Onsite Wastewater Management Plan, particularly regarding any potential for additional costs and what they perceive as unnecessary regulation. The feedback emphasizes empowerment through education and self-management over top-down enforcement. Whilst the community do recognise risks, they are not the top priority, pointing to a need for better communication to link personal benefits (e.g., health, environment). This could foster greater buy-in, addressing the evident divide between council goals and community priorities. Facilitating residents to self-manage their septic systems through education can play a key role (strategy).

- The majority of respondents (91.92%) were current homeowners or residents using onsite wastewater (septic) systems.
- Respondents show strong familiarity with how septic systems work (59.18% very familiar, 23.47% moderately familiar), reflecting practical knowledge from daily use.
- In contrast, awareness of the City’s Onsite Wastewater Management Plan is low (43.37% not at all familiar, 17.86% slightly unfamiliar), highlighting a gap in understanding council-specific initiatives.
- Strong preference for education and resources, with 40.31% wanting improved access to materials about septic systems.
- Community engagement is valued, including opportunities for feedback to council (25.0%) and clearer regulations (18.37%); enforcement (12.24%) and regular inspections (11.22%) rank lower, favouring supportive over regulatory approaches.

Community Sentiment:



Industry Feedback

Feedback was provided by two installers of septic tank systems, Central Highlands Water and three catchment management authorities.

Recognising the work already undertaken in special water supply catchments those key government agencies support the proposed framework. Central Highlands Water would like to see further information on what the routine inspection regime looks like, including the resourcing that City of Ballarat plan to provide. There was support for inspecting the identified historic clusters of properties within in the Declared Sewer District (DSD) and sharing data with CHW to help inform reticulated sewerage infrastructure planning.

Feedback from installers of septic tanks noted an inconsistency in enforcement by authorities. They noted challenges they faced in ensuring compliance with onsite wastewater management regulations and guidelines. In addition, the of lack of customer awareness and cooperation and the non-compliant practices of competitors was an issue.

OWMP implementation

Implementation of the plan will be undertaken in accordance with the level of resourcing available. The objectives of the plan will be to prioritise high risk systems located within special water supply catchments and failing OWMS within the declared sewerage district. The plan has outlined 5 strategies ranging from education, inspecting systems within special water supply catchments and the declared sewer district (9 historical clusters of systems) and exploring external funding opportunities to resource the plan.

Legislation and Standards

Environment Protection Act 2017

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 *Environment Protection Act 2017* empowers local Councils to regulate onsite wastewater management systems by issuing permits for installations with a daily flow rate not exceeding 5,000 litres a day. Such systems must comply with prescribed design and performance standards, and secondary treatment systems must possess a certificate of conformance as a prerequisite for approval. Furthermore, the Act equips Councils with enforcement mechanisms to address non-compliant or failing systems.

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

Key legislation relating to land development in Victoria is the *Planning and Environment Act 1987* (“P & E Act”). Two objectives under the planning framework 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 Planning and Environment Act 1987 mandates that all land use and development occur in accordance with the planning scheme applicable to the relevant municipal district. Land within proclaimed special water supply catchments is subject to Environmental Significance Overlay Schedule 3 (ESO3) under the Ballarat Planning Scheme, which imposes specific requirements to safeguard water quality.

Pursuant to Clause 66.02-5 of the Victorian Planning Provisions, Central Highlands Water (CHW) is designated as a determining referral authority for planning permit applications within a special water supply catchment. This designation applies to applications for the use or development of land. It includes subdivisions, consolidations, construction of buildings or works, or demolition of buildings or works. Consequently, CHW may lodge an objection, obligating the responsible authority to refuse the permit, or may direct the imposition of conditions on any permit granted.

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 and resourced Onsite Wastewater Management Plan that manages the risk to the catchments. The suitability of an OWMP comprises:

- effective monitoring of the condition and management of onsite wastewater management systems,
- Acting where non-compliances are identified,
- Ensuring the implementation of the plan is suitably resourced.

Water Act 1989

Section 180 of the *Water Act 1989* obliges Councils to refer applications for permits to install an onsite wastewater management system within a declared sewerage district to the relevant water corporation, provided that corporation has lodged a standing written request. Central Highlands Water has issued such a request to the City of Ballarat.

Under Section 147 of the *Water Act 1989*, water corporations are authorised to direct the owner of a serviced property to connect to the reticulated sewerage system for wastewater disposal. This mechanism is particularly applicable where site constraints preclude effective onsite wastewater management and connection to reticulated sewerage represents the most sustainable long-term solution for non-compliant or failing systems.

Industry Guidelines

Guideline for Onsite Wastewater Management (EPA Victoria, May 2024): provides a comprehensive reference to support Victoria’s environmental protection framework. It outlines a risk-based approach for the design, installation, operation, and regulation of onsite wastewater management systems (OWMS $\leq 5,000$ L/day). The guideline is intended to help councils, water corporations, and industry professionals understand and meet their obligations under the Environment Protection Act 2017 and Environment Protection Regulations 2021, ensuring onsite wastewater is managed in a way that minimises risks to human health and the environment.

Guideline for Onsite Wastewater Effluent Dispersal and Recycling Systems (May 2024): provides technical and practical guidance for professionals involved in onsite wastewater management. It supports Victoria’s environmental protection framework by outlining a risk-based approach to the selection, design, construction, and operation of effluent dispersal and recycling systems (EDRS) for small-scale onsite wastewater systems ($\leq 5,000$ L/day). The guideline aims to ensure that these systems protect human health and the environment, comply with the Environment Protection Act 2017, and align with best practice standards and regulatory expectations.

AS/NZS 1546 – On-site Domestic Wastewater Treatment Units specifies performance, design, testing, and installation requirements for domestic wastewater treatment systems to ensure they operate safely, effectively, and protect human health and the environment.

AS/NZS 1547:2012 – On-site Domestic Wastewater Management is to provide nationally consistent requirements and guidance for the design, installation, and management of onsite wastewater systems to ensure the protection of public health and the environment.

AS/NZS 3500 – Plumbing and Drainage sets out the technical and performance requirements for the design, installation, and maintenance of plumbing and drainage systems to ensure they are safe, efficient, and hygienic for public health and environmental protection.

Roles and Responsibilities

City of Ballarat: play a key regulatory and oversight role in the management of onsite wastewater systems by assessing, approving, and permitting their installation and alteration in accordance with environmental and public health legislation. They monitor compliance through inspections, enforcement, and education to ensure systems operate effectively and do not cause pollution or health risks. Councils also provide guidance to landholders and practitioners to support consistent, risk-based management of onsite wastewater within their municipalities.

Landholders: play a crucial role in ensuring their onsite wastewater management systems are properly operated and maintained to protect human health and the environment. They are responsible for using the system as intended, arranging regular servicing, and addressing any faults or failures promptly. By managing their systems responsibly, landholders help prevent pollution of soil and waterways, reduce public health risks, and extend the lifespan of their wastewater infrastructure.

Environment Protection Authority: sets the overarching regulatory framework, standards, and guidelines for the safe and sustainable management of onsite wastewater systems in Victoria. It provides technical guidance, such as the *Guideline for Onsite Wastewater Management*, to help councils, industry, and landholders meet their legal obligations under the *Environment Protection Act 2017*. The EPA also supports compliance and continuous improvement by providing resources, and overseeing how environmental risks from onsite wastewater are managed across the state.

Water Authorities: Central Highlands Water play a supporting role in the management of onsite wastewater management systems by providing input for councils on permit applications and system suitability where wastewater may impact public water supplies or sewer networks. Water authorities must be consulted during the development of Onsite Wastewater Management Plans. For areas where onsite wastewater cannot be appropriately managed onsite water authorities are required to work with council to develop risk management strategies.

Land Capability Assessors: play a critical role in the design and management of onsite wastewater systems by evaluating the physical and environmental characteristics of a site to determine its ability to sustainably manage and contain treated effluent. They use soil, topography, and climate data to identify constraints and recommend suitable system types, layouts, and mitigation measures that protect public health and the environment. Their assessments provide essential evidence to inform council decisions, guide system design, and ensure long-term sustainable wastewater management.

Catchment Management Authorities: are regional bodies responsible for coordinating integrated natural resource management across river catchments, including water quality, soil health, biodiversity, and flood risk mitigation. In relation to flood management, CMAs collect, maintain, and analyse critical data on flood plains, historical inundation extents, and hydrological modelling to support evidence-based planning. They inform councils of potential flood impacts for proposed onsite wastewater management systems by providing flood mapping, risk assessments, and design guidance to ensure wastewater systems are situated above flood levels to avoid effluent contaminating waterways during floods.

Risks associated with domestic wastewater

Onsite wastewater management systems, if poorly designed, maintained, or located, can release untreated or partially treated domestic wastewater into the environment, posing significant risks to human health through exposure to pathogens such as bacteria, viruses, and parasites. Contaminated water can infiltrate drinking water sources, leading to waterborne diseases.

Environmentally, excess nutrients like nitrogen and phosphorus from wastewater can contaminate soil, surface water, and groundwater, causing algal blooms, oxygen depletion, and ecosystem disruption. Chemical pollutants and emerging contaminants in domestic wastewater can accumulate in soil and waterways, affecting both wildlife and long-term environmental quality.

Additionally, issues arise through offensive odours, unsightly discharges and seepage leading to reduced amenity and reduction in property values. This was indicated in the *Auditor General's Officer Report; Protecting our environment and community from failing septic tanks* (2006).

Risk Assessment

City of Ballarat continues to work towards a comprehensive framework for evaluating risks from onsite wastewater management systems at the catchment level, building on established guidance to integrate data-driven assessments that prioritise human health and environmental protection. This risk assessment process incorporates key determinates such as:

- soil types (e.g., permeability and texture influencing effluent absorption),
- lot sizes (affecting buffer zones and system feasibility),
- proximity to sensitive environments like watercourses, flood plains, and groundwaters (to mitigate contamination pathways during runoff or inundation).
- rainfall data,
- topography (impacting drainage and slope stability),
- onsite wastewater system density, and
- system types (e.g., primary vs. secondary treatment).

It is acknowledged there may be data limitations and assumptions may need be made based on the best information available at the time.

Special Water Supply Catchments

Within the City of Ballarat, proclaimed special water supply catchments are subject to development restrictions outlined in the *Minister’s Guidelines for Planning Permit Applications in Open, Potable Water Supply Catchment Areas (2024)*. In the absence of an endorsed Onsite Wastewater Management Plan by Central Highlands Water, the construction of new dwellings within these catchments is limited to a maximum density of one dwelling per 40 hectares.

City of Ballarat encompasses five special water supply catchments, defined as areas where surface water drains into reservoirs designated for potable supply. For the township of Learmonth, the catchment pertains to a potable supply bore situated on Bankin Hill. The distribution of onsite wastewater management systems within these catchments is detailed in Table 1, with catchment boundaries illustrated in Figure 1. Given the elevated risk of pathogen transmission from wastewater to drinking water sources, planning for onsite wastewater management systems within these catchments is conducted with the utmost caution.

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

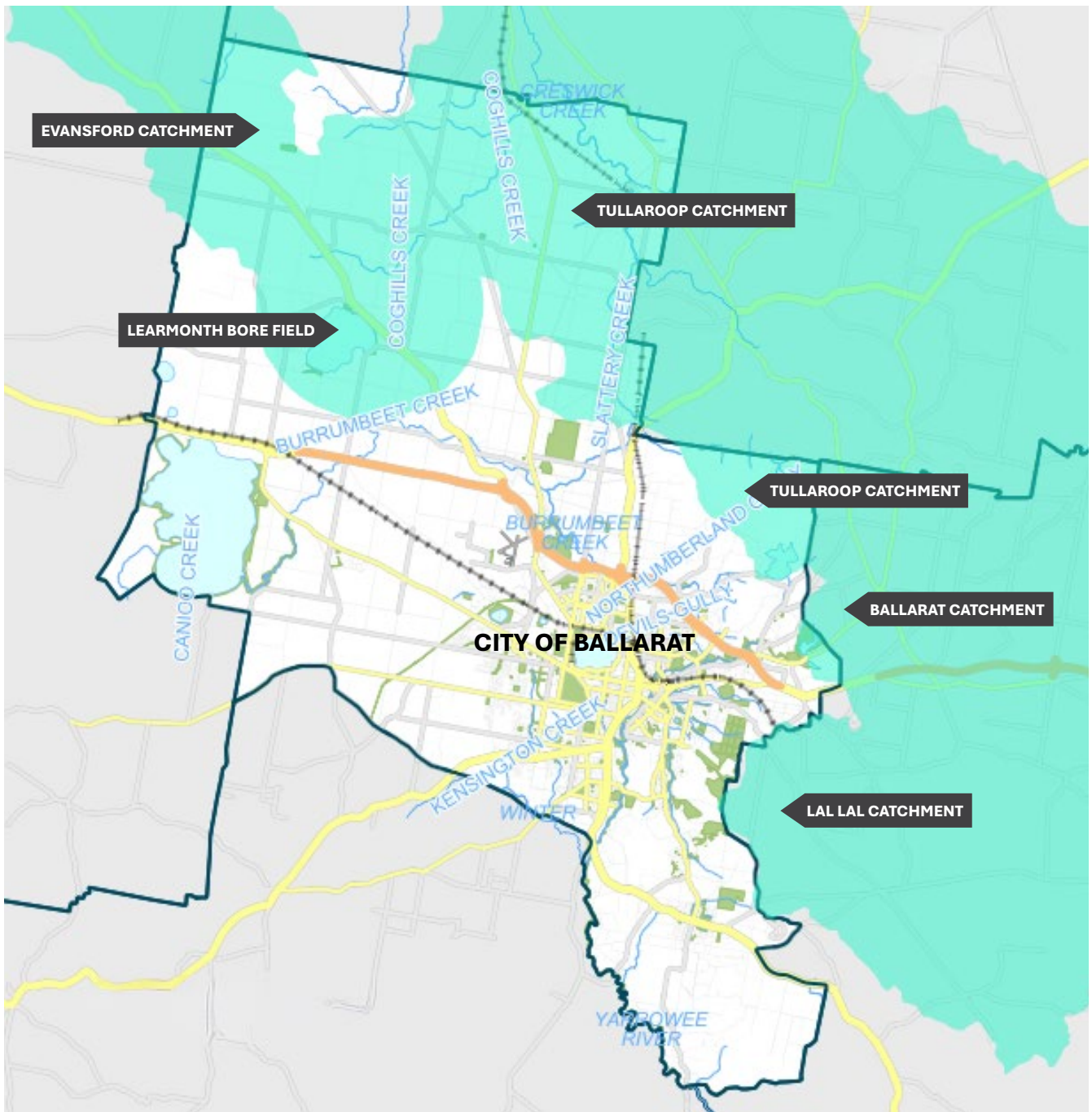


Figure 3: Location of the five special water supply catchments.

Current Situation

City of Ballarat continues to work with property owners to facilitate the upgrade and replacement of onsite wastewater management systems (OWMS) when failures occur. These efforts have contributed to a measurable reduction in non-compliant systems within special water supply catchments, which remain a priority focus. Refer to Appendix A for detailed findings and outcomes from the implementation of the OWMP 2019–2024.

Within or adjacent to declared sewerage districts, nine historical clusters of properties reliant on OWMS persist. These properties typically feature small lot sizes, constraining the capacity for effective onsite wastewater treatment and disposal. The preferred long-term solution for failing systems is the extension of reticulated sewerage infrastructure to facilitate connection. Proximity to existing sewer mains is a critical factor in cost-effectiveness and voluntary uptake. Challenging topography further complicates engineering design and escalates connection expenses for property owners.

Strategic planning for reticulated sewerage must account for legacy systems, particularly in urban-fringe and township areas characterised by higher population densities and smaller allotments, conditions that heighten risks to public health and the environment. Extension of reticulated sewerage system provides viable pathways for connecting failing or obsolete OWMS and accommodates new development. Enhanced data sharing with Central Highlands Water, supported by a systematic OWMS inspection and mapping program can better inform infrastructure prioritisation.

Anecdotal evidence suggests a key barrier to building sewerage infrastructure is distributing the capital cost obligations in an equitable manner. Negotiating voluntary contributions among households with disparate financial capacity and varying OWMS performance proves challenging. Property developers typically seek to minimise expenditure, while some existing owners lack the means to contribute, resulting in stalled initiatives despite collective benefits.

Collaborative information exchange and joint planning with CHW can enable targeted sewerage extension. Given individual connection costs often exceed \$20,000, upfront payment represents a significant financial barrier for many households. A more equitable mechanism would allow costs to be paid over an extended period. The *Water Industry Act 1994* provides for a 20-year repayment option for reticulated sewerage services, a provision outside the City of Ballarat's direct authority but one that acknowledges the administrative complexities of long-term cost recovery. However, spreading payments over two decades could enhance affordability and stakeholder participation.

Plan Implementation

Implementation of the plan will be resource dependant but will aim to cover the below 5 strategies.

Strategy 1

Increase owner/occupier awareness for properties serviced by OWMS; responsible management prevents system failures.

Property owners and occupiers with onsite wastewater management systems must be fully cognisant of their legal and operational responsibilities to ensure effective system management. Proactive education of these stakeholders is essential to prevent system failures and to equip them with appropriate response measures.

Educational resources have been developed and new resources will be created based on community feedback. These educational resources will be allocated with new permits when issued, through compliance monitoring and made accessible via the City of Ballarat Website. A targeted mail-out program to properties within special water supply catchments and declared sewerage districts is recommended but will be resource dependant.

Strategy 2

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

All 404 onsite wastewater management systems within special water supply catchments have been inspected and mapped. High-risk non-compliant systems have been subject to remedial works, including system modifications or full replacements, mitigating environmental and public health hazards.

Approximately 18 low-risk OWMS remain in need of upgrades to ensure complete onsite containment and treatment of wastewater. A baseline inspection regime will be maintained in special water supply catchments targeting systems exhibiting elevated risk profiles. Targeting systems within close proximity to waterways (drainage pathways) and taking into consideration system age (>15 years old) and system type (i.e. primary treatment vs secondary treatment/AWTS). City of Ballarat will use existing data to inform the risk assessment.

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. City of Ballarat will work collaboratively with Central Highlands Water to establish a database of these properties and 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.

Nine historic clusters of onsite wastewater management systems (OWMS) have been identified within or adjacent to declared sewerage districts (DSD) in the following suburbs:

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

A systematic assessment of these systems will yield contemporary data on performance and cumulative environmental and public health impacts. The resulting prioritisation of systems requiring intervention will inform strategic sewerage infrastructure planning. Properties constrained by site limitations that preclude full onsite wastewater containment necessitate connection to reticulated sewerage as the preferred long-term sustainable solution. Successful implementation will require close collaboration between the City of Ballarat and Central Highlands Water.

Strategy 5

Explore funding options to resource the implementation of the OWMP.

Revenue generated from statutory fees and charges associated with onsite wastewater management system (OWMS) permits does not achieve full cost recovery and is insufficient to fully resource the implementation of this plan. Notwithstanding a firm commitment to deliver the plan within existing budgetary allocations, future grant opportunities from State government agencies will be pursued as they arise to support execution.

The City of Ballarat made a substantial investment in the 2013–2018 Onsite Wastewater Management Plan (OWMP), funding a dedicated full-time project officer for approximately 2.5 years at a cost exceeding \$200,000, sourced from general revenue. Central Highlands Water endorsed that plan on 13 February 2017. The endorsement provided an opportunity for the potential relaxing of development restriction in special water supply catchments for compliant lots. The broader community gained through proactive identification and remediation of failing systems, thereby reducing the risk of contamination to potable water supplies and environment.

Appendix A: Outcomes from the 2019–2024 OWMP

The below summary of actions and outcomes are from the implementation of the OWMP 2019-2024.

Approximately 3,171 OWMS records documented in the City of Ballarat’s Geographic Information System.	Special Water Supply Catchments (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 needed to be upgraded/rectified.
Declared Sewer District (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 identified requiring upgrades.	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 Building on the City of Ballarat’s execution of the prior Onsite Wastewater Management Plan (2019-2024), five high-risk and 20 medium-risk systems were initially identified within special water supply catchments. Plan implementation facilitated 56 inspections, with subsequent remedial works undertaken by property owners. Consequently, no high-risk systems remain within the SWSC, and only four medium-risk systems are to be upgraded. To date, all onsite wastewater management systems within special water supply catchments have been inspected and geospatially mapped in City of Ballarat data base.	
420 OWMS in the declared sewer district Sixty-four inspections have been conducted within declared sewerage districts, identifying four high-risk onsite wastewater management systems, two of which have undergone performance-enhancing upgrades. Nine medium-risk systems were also flagged for remedial works to improve compliance and functionality. The total number of OWMS within the DSD is dynamic, reflecting ongoing expansion to accommodate urban growth areas and large-scale subdivisions. Nine historic clusters of non-compliant OWMS persist within or adjacent to the DSD. These clusters will be reassessed to obtain current performance data, which will be shared with Central Highlands Water to inform strategic sewerage infrastructure planning.	

2,347 OWMS outside SWSC and DSD

Onsite wastewater management systems situated outside special water supply catchments and declared sewerage districts are accorded lower priority than those within these areas; nevertheless, failing systems continue to pose environmental and public health risks through off-site wastewater discharge.

As such systems are typically identified via voluntary upgrade applications, pre-purchase enquiries, or complaints. The City of Ballarat will maintain efforts to rectify non-compliances. System data will be progressively enhanced through targeted on-site inspections.

To date, 142 inspections have been conducted outside the SWSC and DSD, identifying seven high-risk systems, two of which have been upgraded. Additionally, 24 medium-risk systems were detected, with remedial works completed on one system, thereby reducing its risk classification to minor.

Geospatial Information System (GIS)

A Geospatial Information System (GIS) has been redeveloped, incorporating datasets aligned with the Department of Energy, Environment and Climate Action's risk assessment framework for onsite wastewater management systems. This platform undergoes continuous refinement as dataset gaps are filled.

The GIS supports multiple functions, including the evaluation of new OWMS permit applications, review of land capability assessments, identification of high-risk systems within special water supply catchments, monitoring of system density, and investigation of complaints. The data will help inform a risk-based inspection program for priority systems. At a strategic level, City of Ballarat can leverage this information to guide future land-use planning and infrastructure decisions.

Stakeholder education

Stakeholder education (knowledge) is essential for the effective management and operation of OWMS. Stakeholder knowledge represents a primary mechanism for preventing system failure. A key challenge is raising occupier awareness, which education initiatives seek to address through the promotion of proactive system maintenance.

An information pack has been developed, encompassing both wastewater treatment plants and conventional septic tank systems, detailing critical responsibilities and management practices. In addition, stickers and magnets were produced identifying that properties are serviced by an OWMS. These materials are distributed with all new permit applications and through compliance monitoring. As part of the community consultation process a mailout to 3,170 properties provided access to this information which is publicly available on the City of Ballarat website.

Additionally, branded magnets and stickers have been produced to visibly identify properties serviced by OWMS. These are designed for placement directly on the systems, with fridge magnets serving as ongoing household reminders. Both items feature a QR code linking directly to the online education resources. Refer to Appendix C.

Conclusion

Between 2019 and 2024, City of Ballarat achieved measurable progress in managing onsite wastewater management systems through targeted inspections, stakeholder engagement. The municipality maintains records for approximately 3,171 OWMS, comprising 404 within special water supply catchments, 420 within declared sewerage districts, and 2,347 in other areas.

Persistent challenges remain, including owner/occupier awareness, aging infrastructure and identified clusters of OWMS on constrained lots within the DSD. City of Ballarat acknowledges financial barriers exist for reticulated sewerage connection. Effectively addressing these issues requires a coordinated, sustained effort encompassing strategic planning, secured funding, and robust community engagement. Successful implementation of the five identified strategies can mitigate these risks but remains contingent upon adequate resourcing.

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 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

Appendix C: Education Materials

Septic Tank System



**Onsite Wastewater Management Systems (OWMS)
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 2007 and accompanying regulations which create the **Danard Environmental Duty (DED)** 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 rental), 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 septic farm, with wastewater discharging into absorption trenches) or a secondary treatment system (wastewater treatment plant or septic 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.

ballarat.vic.gov.au



**Onsite Wastewater Management Systems (OWMS)
Septic Tank System**

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 soft 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),
- 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 down slope 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 5322 9500 for advice and required action.

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Wastewater Treatment Plant



**Onsite Wastewater Management Systems (OWMS)
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 2007 and accompanying regulations which create the **Danard Environmental Duty (DED)** 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 rental), 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 septic farm, with wastewater discharging into absorption trenches) or a secondary treatment system (wastewater treatment plant or septic 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.

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**Onsite Wastewater Management Systems (OWMS)
Wastewater Treatment Plant**

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 soft 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"

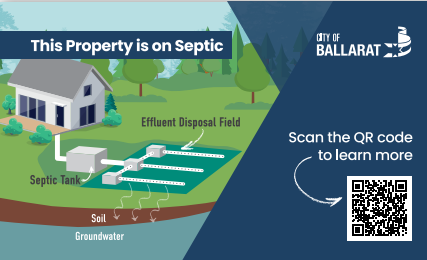
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- wastewater surfacing (pooling) near the disposal lines,
- presence of dead or dying vegetation or lush green growth down slope of the wastewater disposal field,
- inspection pits and/or wastewater disposal lines consistently exhibiting high water 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 5322 9500 for advice and required action.

ballarat.vic.gov.au

Fridge Magnet and Stickers



This Property is on Septic

Effluent Disposal Field

Septic Tank

Soil Groundwater

Scan the QR code to learn more



City of Ballarat



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All information correct at time of publication.