

Domestic Wastewater Management Plan

2023-2027



Mount Alexander
Shire Council

Acknowledgement Of Country

Mount Alexander Shire Council acknowledges that the traditional custodians of this land, the Dja Dja Wurrung and Taungurung peoples, proudly survive. We acknowledge their continued practise of custom and their close cultural, spiritual, physical, social, historical and economic relationship with the land and waters that make up their country, which includes Mount Alexander Shire.

Council recognises the Victorian Government's Recognition and Settlement with both the Dja Dja Wurrung Clans Aboriginal Corporation



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Introduction

Mount Alexander Shire Council (Council), in accordance with the Environment Protection Act 2017 and other environmental protection regulations, leads oversight of domestic onsite wastewater management systems within Mount Alexander Shire.

Domestic onsite wastewater management systems, are wastewater systems that process flows under 5000 litres each day. They are used at residential, community and business premises where access to the reticulated sewer system is not possible.

Systems that handle, or are designed to handle, higher flow rates need Environment Protection Authority approval.

Domestic wastewater management systems collect, treat, then recycle or dispose of:

- Greywater, which is non-toilet waste
- Blackwater, which is toilet waste
- Sewage, which is combined greywater and blackwater.

Domestic wastewater management systems include conventional septic tanks, aerated wastewater treatment systems, greywater treatment systems, waterless composting toilets, and worm systems.

If managed inappropriately domestic wastewater may transport nutrients, pathogens and other pollutants to surface waters, and impact on groundwater beneficial uses. This can adversely affect human health, social amenity, and the economy and environment. Properly designed, installed and maintained onsite wastewater management systems can safely treat and dispose of domestic wastewater on-site.

The review and update of this plan reinforces our commitment to appropriately manage domestic wastewater throughout Mount Alexander Shire and has streamlined our focus for managing domestic wastewater management systems across Mount Alexander Shire and our approach to completing the required actions.



Purpose and Scope

Section 29 of the State Environment Protection Policy (Waters) released in 2018 states, Councils that have onsite wastewater management systems within their municipality must develop and implement a Domestic Wastewater Management Plan.

The Domestic Wastewater Management Plan must identify the public health and environmental risks associated with the onsite wastewater management systems and set out strategies to minimise those risks.

The purpose of this municipal Domestic Wastewater Management Plan is to document Council's approach to protect public health, the environment, and local amenity from the risks posed by domestic wastewater.

This Plan aims to ensure that a lack of access to sewer will not unnecessarily impact development in unsewered areas.

Furthermore, in November 2012 the Victorian Government released the Ministerial Guideline 'Planning Permit Applications in Open, Potable Water Supply Catchment Areas' ('the Ministerial Guidelines'). The Ministerial Guidelines directed councils to strengthen their domestic wastewater management plans in order to better protect water catchments that provide water for potable use. Approximately 95 percent of Mount Alexander

Shire Council falls within the Declared Special Water Supply Catchment Areas of Eppalock and Cairn Curran as depicted in Figure 1 below.

Guideline 1 of the Ministerial Guidelines state that where a planning permit is required to use land for a dwelling or subdivide land within a water supply catchment area, the density of dwellings should be no greater than one dwelling per 40 hectares, unless exemptions apply.

Exemptions apply where:

- Catchment or water quality protection is not an objective in the Environmental Significance Overlay;
- A planning permit is not required;
- The proposed development will be connected to reticulated sewerage;
- A Catchment Policy has been prepared for the catchment and endorsed by the water corporation in consultation with key stakeholders and the proposed development is consistent with the Policy;
- Certain conditions are met, including the preparation, adoption, and implementation of a domestic wastewater management plan meeting requirements specified in the Guidelines.

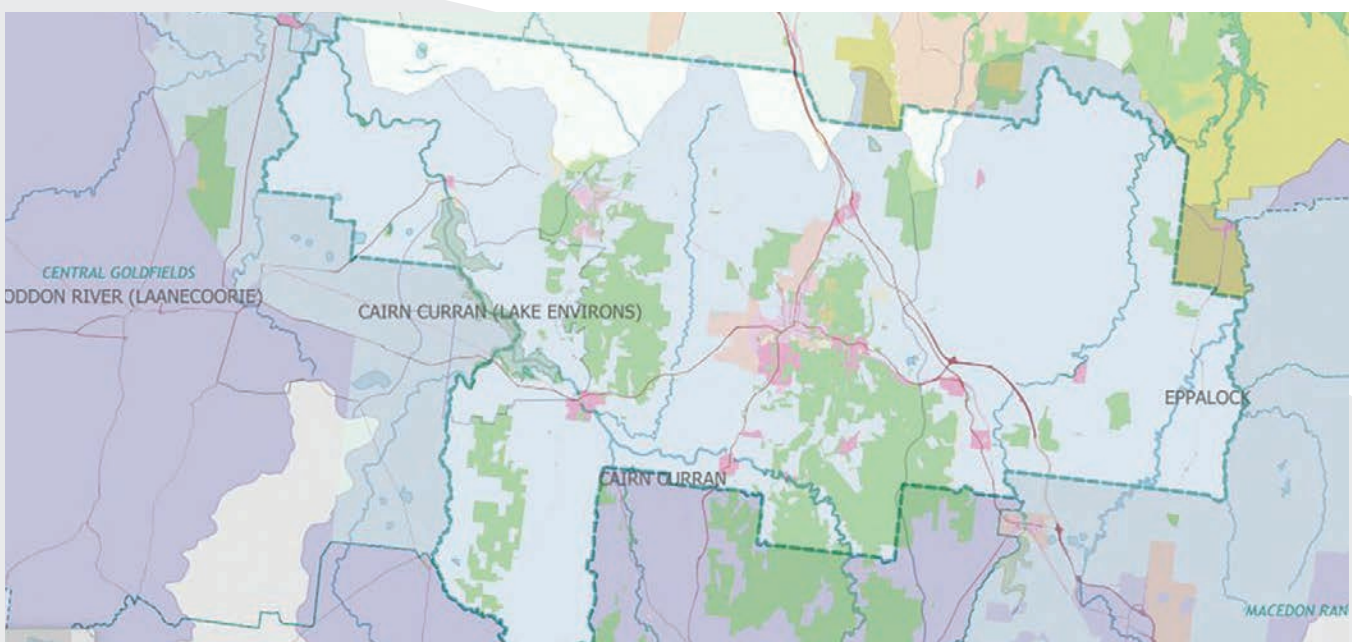


Figure 1: Open Potable Water Supply Catchment (shaded) overlay on Mount Alexander Shire.

This Plan aims to provide Council with operational confidence in managing onsite wastewater management systems throughout the municipality by implementing the additional requirements of the Ministerial Guidelines that are beyond those set out in the State Environment Protection Policy (Water) such as:

- Effective collaboration with all relevant stakeholders, including Council's Public and Environmental Health, Statutory Planning, Strategic Planning and Information Technology and Emergency Management teams as well as the Environment Protection Authority, Coliban Water and Goulburn Murray Water, in developing, implementing, reviewing and updating the Domestic Wastewater Management Plan;
- Effective monitoring of the condition and management of onsite wastewater management systems throughout the municipality;
- That the results of monitoring be provided to Council's Public and Environmental Health, Statutory Planning and Strategic Planning teams as well as the Environment Protection Authority, Coliban Water and Goulburn Murray Water;
- Compliance action where non-compliance is identified;
- A process of review and updating (if necessary) of the Domestic Wastewater Management Plan every five years;
- An independent audit by an accredited auditor (Water Corporation approved) of implementation of the Domestic Wastewater Management Plan, including the monitoring and enforcement of the Plan, every three years;
- That the results of the audit be provided to stakeholders as soon as possible after the relevant assessment;
- Councils to demonstrate that suitable resourcing for implementation, including monitoring, enforcement, review and audit, is in place.



Plan Development

The Plan has been developed and reviewed with the assistance of a Project Reference Group comprising representatives from Council's Public and Environmental Health, Statutory Planning, Strategic Planning and Information Technology teams. In line with the requirements set out on page four of The Ministerial Guidelines, the Project Reference Group also includes representatives from the Environment Protection Authority, Coliban Water and Goulburn Murray Water.

Other Council plans and external plans, such as the Loddon Mallee South Regional Growth Plan, have been considered in the development of this Plan.

Council's Public and Environmental Health Officers will lead the Plan implementation and will arrange for the review, update and audit of the plan in line with the Ministerial Guidelines. The Guidelines state that a domestic wastewater management plan must provide for a process of review and updating (if necessary) every five years and be independently audited by an accredited auditor (approved by the relevant water corporation) every three years.



Terms and Acronyms

Blackwater: Wastewater from toilets containing faeces and urine.

BOD: Biochemical Oxygen Demand - a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The BOD test is typically conducted in a period of 5 days under specified conditions and may then also be referenced as BOD5

Effluent: Liquid flowing out of a treatment process.

Greywater: a household wastewater that comes from showers, baths, hand basins, washing machines, laundry troughs and kitchen.

Groundwater: Water found below the earth's surface usually in porous rock or soil or in underground aquifers.

Land Capability Assessment: A report prepared by a suitably qualified soil science professional, and submitted to Council by project proponents who plan to use an Onsite Wastewater Management System to treat wastewater.

Onsite Wastewater Management System: Onsite Wastewater Management Systems, including septic tanks, are wastewater systems that process flows under 5000 litres per day. They are used at residential, community and business premises where access to reticulated sewer is not available.

Primary Treated Wastewater: Wastewater treatment involving sedimentation (sometimes preceded by screening and grit removal) to remove gross and settleable solids. The remaining settled solids, referred to as sludge, are removed and treated separately.

Secondary Treated Wastewater: Generally, a level of treatment that removes 85 percent of BOD and suspended solids via biological or chemical treatment processes.

Septic Tank: A domestic 'septic tank' is an onsite wastewater management system that processes flows under 5000 litres each day (See Figure 2).

Sewage: Combined greywater, blackwater and trade waste.

Sludge: Solid matter that is removed during wastewater treatment.

Water Supply Catchment Area: A potable water supply catchment area that provides water resources to a water storage/s for domestic water supply.

Position Statement

Council's position is that wastewater should be directed to the reticulated sewer system where Coliban Water indicates that a connection is feasible and Council concurs with this assessment.

In sewerred areas, onsite wastewater management systems such as dry composting toilets and greywater systems for summer garden watering (with all residual liquid discharged to sewer) can be installed for environmental sustainability or other motivations, but the appropriateness of such systems for a site must be considered carefully through consultation with Council and the appropriate Council approvals given.

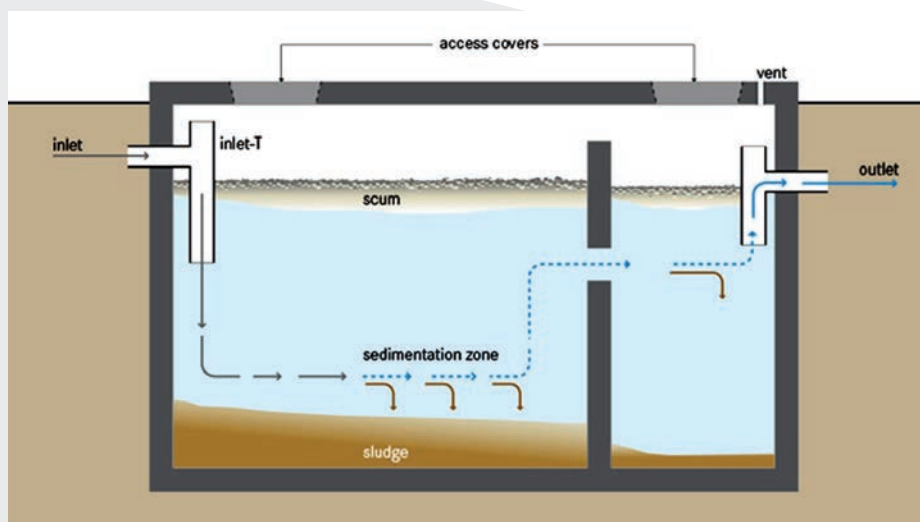


Figure 2:
Typical septic tank

Context

Mount Alexander Shire profile

Mount Alexander Shire is a rural municipality situated approximately 120 kilometres north-west of Melbourne. It is approximately 1530 square kilometres in area.

Mount Alexander Shire encompasses the largely sewered towns of Castlemaine, Harcourt, Maldon and Newstead, and the un-sewered centres of Yapeen, Guildford, Welshmans Reef, Taradale, Elphinstone, Guildford, Vaughan, Fryerstown and Baringhup.

Wastewater management is a constraint to development in a number of smaller towns in the shire where reticulated sewer is not available. Small property lot sizes can mean there is inadequate area available to treat and retain wastewater onsite, even with modern onsite wastewater management systems. The extensive farming zone generally has no access to sewer.

Soils in the municipality include granite, alluvial, sedimentary and basalt. These soils have different capabilities in terms of onsite domestic wastewater disposal.

Importantly, almost the entire Mount Alexander Shire is within the declared special water supply catchment areas of Eppalock and Cairn Curran.

The most recent census data from 2021 indicates that Mount Alexander Shire has an estimated population of 20,106 people. Between 2011 and 2021, the estimated resident population increased by 2,234 people, reflecting a compound annual growth rate of 1.2%.

As a proportion of these new residents will move to the shire seeking a lifestyle in the 'amenity landscape' there will be ongoing pressure to provide land for smaller lot rural living.

In developing and updating this Plan Council located approximately 2600 onsite wastewater management systems across Mount Alexander Shire. This number includes over 500 added to Council's database over a number of years through a concerted monitoring and compliance effort and also includes new installations that have taken place over the past five years.

Based on the number of homes outside of the areas where reticulated sewer is available, we estimate that there are at least 3000 onsite wastewater management systems throughout Mount Alexander Shire.

We further estimate that over 45 percent of all these installations are greater than 20 years old and are conventional type systems with sub-soil trench disposal. Many systems installed prior to 1980 would no longer be compliant under current Environment Protection Authority Regulations.

Where these systems are in unsewered pockets in sewered townships, Council will continue to work with Coliban Water to identify solutions and plan for future rectification moving forward.

Community education actions in this Plan seek to give property owners and occupiers appropriate information regarding their responsibilities to install and maintain their onsite wastewater management system. Responsibilities will also extend to installers and maintenance contractors.

Case Study - Development in Taradale

Domestic wastewater management is an important issue at the interface between the environment and public health. It can have a large impact on small townships without reticulated sewage services.

Taradale, a small town of approximately 500 people on the Calder Highway corridor is an example of a place where development is currently constrained by the lack of a township-scale wastewater management options. The smaller lots zoned for residential use in Taradale (See Figure 3) were established preceding consideration of sustainably treating and retaining wastewater within property boundaries through onsite wastewater management systems and at a time when the 'night soil' would have been collected and disposed of offsite.

Currently, the development of many town blocks is constrained by onsite wastewater management system feasibility for reasons including lot size (less than 1000m²), long and narrow shapes, soils which include shallow profiles, rocks, and slope, low terrain situations that can become wet and saturated at times, and the potential for incremental effects associated with increasing concentration of onsite wastewater management system development within the township. Practically, many small blocks do not include an adequate area for wastewater disposal for developments larger than a single bedroom dwelling, and others may not be able

to sustain any residential development at all. Existing onsite wastewater management systems are predominantly old and may not be well maintained.

Given this context, a centralised sewer system for Taradale is the most appropriate proposal to enable increased development in this town.

To explore options, in 2013 Council commissioned the Taradale Residential Options Study ('the Study'). The Study identified that some form of reticulated sewer could overcome many of the constraints experienced such as soil, slope, climate, drainage and block size, but that retro-fitting a standard sewerage system in the township would involve installation of a network of piping in potentially shallow, rocky profiles in hilly terrain, at a cost deemed to be prohibitive.

The Study suggested, as an alternative, a pressure sewer system that would involve connecting existing septic tanks to a pump well which would then direct primary treated wastewater (through subsurface piping) to an appropriately sized secondary treatment plant. The pump would be automatically activated as and when required. Following secondary treatment, the wastewater would then be dispersed on a suitable parcel of land which would be located outside of the town limits. In the absence of any clear commitment to sewer the township of Taradale's development future is uncertain.

Though this study was completed in 2013, it still holds relevance to the wastewater issues being experienced in Taradale and other similarly-sized.

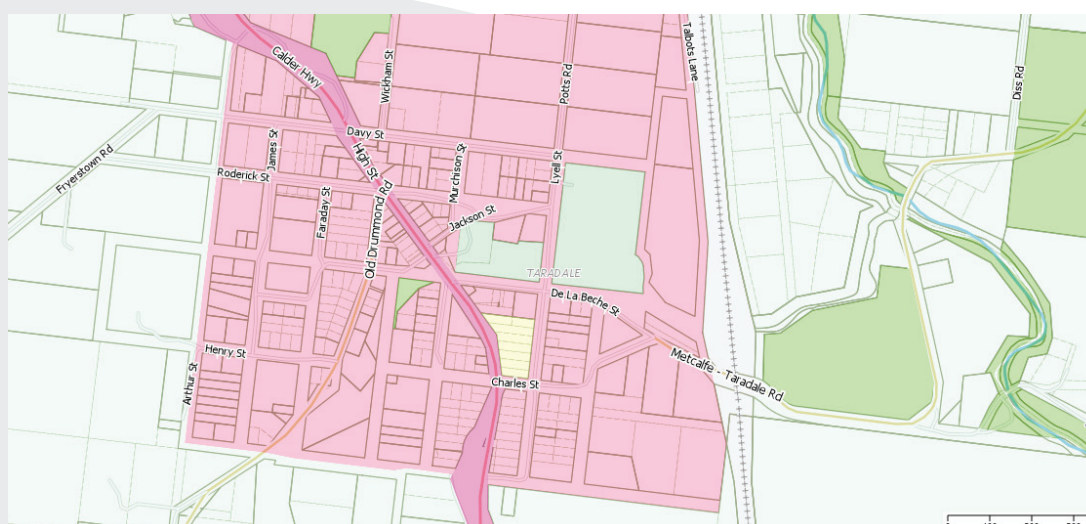


Figure 3: Land parcels in Taradale

Legislation

Overview

Municipal councils have statutory responsibilities for overseeing the installation, use and management of onsite wastewater management systems within their Local Government Area.

Recent changes in Victoria's environmental laws strengthen and clarify the onsite wastewater management obligations for landowners and Councils.

Under the Environment Protection Regulations 2021, onsite wastewater management systems are prescribed permission activities (A20), and as a permit required activity that is administered by the council in whose municipal district the onsite wastewater management system is located.

The Environment Protection Authority Code of Practice ('the Code') – onsite wastewater management 2016, identifies Council's statutory responsibilities in relation to the planning and management of onsite wastewater management systems including the requirement to develop a Domestic Wastewater Management Plan.

Details of specific legislative responsibilities for domestic wastewater management and requirements for the development of domestic wastewater management plans is provided in Section 1.8.2.1 of the Code.

Environment Protection Legislation

The amended *Environment Protection Act 2017* came into effect in Victoria on 1 July 2021. These new environment protection laws, and supporting regulations, focus on preventing waste and pollution impacts, rather than managing impacts after they have occurred.

The general environmental duty is a centrepiece of the new laws and regulations. It applies to all Victorians. If you conduct activities that pose a risk to human health and the environment, you must understand those risks. You must also take reasonably practicable steps to eliminate or minimise them. Onsite wastewater management systems can be a risk to human health and the environment if they are poorly installed or maintained.

The general environmental duty is underpinned by the Environment Protection Regulations 2021, which set out duties and obligations for persons in management or control of land where an onsite wastewater management system is located. These include requirements for the landholder or land manager to:

- Take all reasonable steps to operate the system so it does not pose a risk to human health or the environment;
- Take all reasonable steps to maintain the system in good working order (for residential properties, this applies to the owner, but not to a renter);
- Check for signs the system may be failing or is not in good working order and, from 1 July 2022, notify council if this is the case;
- Respond to system failures;
- Provide information to occupiers regarding the correct operation and maintenance of the system;
- Keep maintenance records and, on request, provide them to council.

As previously mentioned, onsite wastewater management systems are a prescribed permission activity under the new environment protection regulations:

- A permit from the local Council is required to construct, install, or alter an onsite wastewater management system with flow rates of up to 5,000 litres per day on any day. Under the regulations this is prescribed permission activity A20 (as set out in item 28 in the Table in Schedule 1 of the regulations). It applies to proposed new systems and alterations to existing systems, which includes alterations that increase the system's flow or load, such as a house extension or installation of a spa.
- Onsite wastewater management systems that can treat more than 5,000 litres per day are classified as prescribed permission activity A03 (Sewage treatment) and need an Environment Protection Authority development licence and operating licence (unless an exemption applies). This applies to both proposed new systems and existing systems.

Councils may refuse a permit if the onsite wastewater management system does not meet Environment Protection Authority's specifications.

The Regulations also set offences and allow councils to order system maintenance and enforce breaches of duties (Regulation 163 and 169). These Regulations apply to all existing onsite wastewater management systems, including older systems installed before installation permits were introduced. People may still operate old systems, but they must take all reasonable steps to ensure the system is maintained in good working order and operated so as not to pose a risk to human health or the environment.

Further guidance relating to onsite wastewater management includes:

- Code of Practice – Onsite Wastewater Management (Environment Protection Authority Publication 891.4);
- Guidance for owners and occupiers of land with an onsite wastewater management system ≤ 5000 litres on any day (including septic tank systems) (Environment Protection Authority Publication 1976);
- Regulating onsite wastewater management systems: local government toolkit (Environment Protection Authority Publication 1974);
- Victorian Land Capability Assessment Framework (Municipal Association of Victoria).

The Environment Protection Authority Code of practice – Onsite Wastewater Management clearly identifies Council's statutory responsibilities in relation to the planning and management of onsite wastewater systems. These include:

- Assessing land development applications to determine the suitability of a site for an onsite wastewater management system where reticulated sewerage is not available;
- Assessing onsite wastewater management permit applications to ensure systems are designed in accordance with the relevant Victorian Regulations and Australian Standards;
- Issuing Permits to Install/Alter and Certificates to Use onsite wastewater management systems;
- Refusing to issue permits for a proposed development where wastewater cannot be contained within the boundaries of the site and reticulated sewerage is not available or will not be provided at the time of subdivision;

- Overseeing the installation of onsite wastewater systems to ensure compliance with legislative requirements;
- Ensuring systems are managed in accordance with their permit, and the relevant Australian Standard and Victorian Regulations, through relevant compliance and enforcement programs;
- Developing Domestic Wastewater Management Plans;
- Investigating issues with onsite wastewater systems that may be causing impact to public health, amenity and/or the environment;
- Referring high-risk unsewered areas to water authorities so they can be investigated for connection to either a sewer system or an alternative service.

In relation to site access, Council authorised officers (i.e. Council employees appointed as authorised officers under section 242(2) of the *Environment Protection Act 2017*) have powers of entry under the Environment Protection Act 2017. However, for residential premises, entry for inspections can only occur:

- with the consent of the occupier;
- if the authorised officer reasonably believes that a person has contravened, is contravening or is about to contravene a provision of the Act or Regulations; or
- If the authorised officer reasonably believes there is an immediate risk of material harm to human health or the environment.

If one of the last two points applies, the authorised officer can only investigate the part of the residential premises necessary to determine the suspected contravention. For example, this may only require the authorised officer to enter the land surrounding a house to inspect the system.

For the purpose of assessing an installation for approval to use a system (regulation 33), a Council representative (contractor) may also seek and obtain consent to enter residential premises.

The Local Government Act 2020

The *Local Government Act 2020* empowers councils to enact local laws and set special charges for council activities.

The Building Act 1993

The *Building Act 1993* requires a compliance certificate from a licensed plumber be issued at the completion of an onsite wastewater management system installation before an occupancy permit can be issued for a new dwelling

Planning and Environment Act 1987

The *Planning and Environment Act 1987* sets out the requirements for obtaining planning permits. Not all unsewered development will require a planning permit.

Public Health and Wellbeing Act 2008

The *Public Health and Wellbeing Act 2008* states the function of council is to protect, improve and promote health and wellbeing within the municipal district. This Act authorises officers within local councils to remedy as far as possible all nuisances existing in its municipal district.

Australian Standards

The following Australian Standards are of relevance:

AS/NZS 1547 Detailed guidance on Onsite Wastewater Management Systems

This Australian Standard provides the requirements for treatment units and their respective land application systems to achieve sustainable and effective on-site domestic wastewater management, to protect public health and the environment. This Standard identifies the performance statements that cover the overall design and sustainable management of on-site domestic wastewater systems.

AS/NZS 1546 Detailed guidance on construction of Onsite Wastewater Management Systems

This Australian Standard specifies performance requirements and performance criteria for septic tanks, technical means of compliance and provides test specifications that enable septic tanks to be manufactured to comply with the performance requirements and performance criteria.

AS/NZS 3500 Detailed guidance on sanitary drainage

This Australian Standard specifies the requirements for the design and installation of sanitary plumbing and drainage from fixtures to a sewer, common effluent system or an on-site wastewater management system. It applies to new installations, additions or repairs to existing installations.

Council Plans

Council has a number of policies, plans and strategies that contribute to the vision and objectives of the municipality.

Council Plan 2021 - 2025

The Council Plan guides what Council do and how we do it over the four year period from 2021-2025. The plan is supported by how Council achieves its vision: working together for a healthy, connected shire.

The Council plan has three pillars of focus: a healthy, connected and inclusive community, an environment for people and nature and a resilient and growing economy.

In order to facilitate managed growth of our towns while protecting natural assets and to ensure there is sufficient residential, commercial and industrial land to meet demand, Council has committed to developing this Domestic Wastewater Management Plan.

Municipal Public Health and Wellbeing Plan 2021 - 2025

Council's Municipal Public Health and Wellbeing Plan seeks to protect public health and prevent disease, illness, injury, disability or premature death and to promote conditions under which people can be healthy.

This plan assists in achieving the objectives of promoting and protecting public health in the current Municipal Public Health and Wellbeing Plan and will inform the development and implementation of the next Municipal Public Health and Wellbeing Plan.

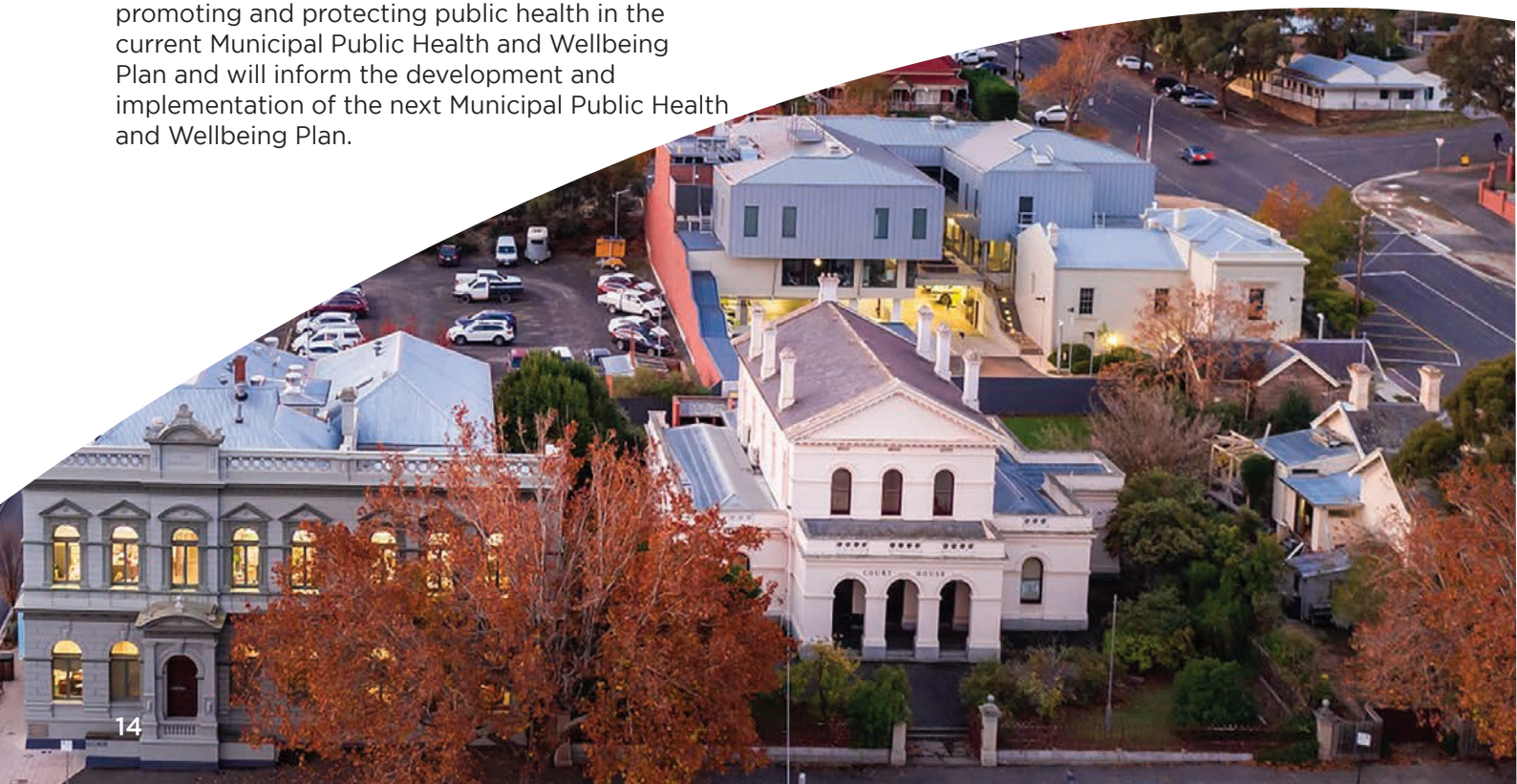
Mount Alexander Shire Council Planning Scheme

The intent of the Planning Scheme in relation to domestic wastewater is that all new subdivisions or developments have provisions for reticulated sewerage services. However, in the absence of a reticulated service, wastewater must be treated and retained on-site.

Referrals are sent to the relevant water authority under Clause 66.02-5.

Mount Alexander Shire Council Rural Land Study 2014

The Rural Land Study looks at options and limitations for future private land use in the shire. One of the limitations to lot size is the ability to treat and retain wastewater on site.



Roles and Responsibilities

The roles and responsibilities for onsite wastewater management extend to government organisations, private industry and landowners.

Environment Protection Authority

The Environment Protection Authority has a statutory responsibility to oversee the protection of the environment.

The Environment Protection Authority publishes a number of policies, and guidance documents for local governments, community members and other stakeholders in relation to domestic wastewater.

In the past, the Environment Protection Authority completed the important role of approving the domestic wastewater systems able to be installed in Victoria under the Certificate of Approval; however, the Environment Protection Authority has transitioned away from this responsibility resulting in a significant shift of burden to councils.

Department of Health

The Victorian Department of Health administers the Public Health and Wellbeing Act 2008 and is responsible for providing advice to the Environment Protection Authority and local government about public health policy related to wastewater management.

Municipal Association of Victoria

The Municipal Association of Victoria have been working for a number of years to improve and raise the profile of domestic wastewater management in Victoria.

The Municipal Association of Victoria advocate on behalf of the sector for the provision of targeted capacity building programs and improvements to the regulatory framework relevant to wastewater management.

They are also responsible for the development of the Onsite Domestic Wastewater Land Capability Assessment Framework developed to provide guidance to Councils, land capability assessors and other stakeholders with guidance on assessing and developing suitable Land Capability Assessments.

North Central Catchment Management Authority

The North Central Catchment Management Authority is responsible for the sustainable development of catchments, floodplains and waterways.

Goulburn Murray Water

Water authorities can be affected by land use activities within water supply catchments, including unsewered developments. Clause 66.02-5 of the Mount Alexander Planning Scheme stipulates that planning permit applications on land located within a Special Water Supply Catchment Area must be referred to Goulburn Murray Water as a relevant water board or water supply authority. Some minor applications are exempt from referral. As a determining authority, Goulburn Murray Water must refuse to grant the permit if they object to the proposal.

Coliban Water

Coliban Water provides potable water and wastewater services to rural and urban customers throughout Mount Alexander Shire. Planning referrals for subdivisions are referred to Coliban Water in areas where reticulated sewer is available or where the subdivision will require extensions to the existing mains.

Landholders

Landholders with onsite wastewater management systems are responsible for:

- Connecting to the sewer where it is available (unless otherwise exempt);
- Obtaining an Onsite Wastewater Management System Permit before a building permit is issued and the onsite wastewater management system is installed;
- Obtaining a permit from Council to construct, install or alter an onsite wastewater management system;
- Ensuring system installers are licensed plumbers who have specialist knowledge to install the nominated system;
- Take reasonable steps to:
 - operate the system so it doesn't pose a risk to human health or the environment;
 - maintain (except for residential renters) the system in good working order, including older legacy systems that may not meet current standards;
 - check for signs the system may be failing or isn't in good working order and notify Council if it is;
 - respond to any system failures.
- Ensuring the effluent absorption area remains clear from development, unsuitable vegetation, and impermeable surfaces.

Land Capability Assessors

Land Capability Assessors need to have appropriate qualifications, experience and indemnity to undertake their work. They should be able to produce a report that is unbiased and assess the capability of the land in regards to wastewater disposal, rather than supporting the proposal of a land developer.

Building Surveyors

Building surveyors must obtain a copy of the appropriate septic tank permits for developments in unsewered areas before issuing a building permit, and a copy of the certificate to use before issuing an occupancy permit.

Onsite Wastewater Management System Installers

Onsite wastewater management systems must be installed by a licenced plumber. Plumbers must ensure that the wastewater management system complies with the relevant Australian Standards, Council permit conditions, manufacturer's specifications and Victorian Plumbing Regulations 2008.

Once installation is complete, the plumber must ensure the installed system complies with the Council permit conditions, and provide Council with a certificate of compliance and other paperwork requested in the permit to install.

Achievements and Future Direction

Previous plans

Information collected to inform the development of Council's first DWMP in 2007 led to further work, collaboration and advocacy for high-risk, unsewered areas, such as Reckleben Street in Castlemaine, to be connected to reticulated sewer.

In 2012, extensive works were undertaken by Coliban Water to extend the reticulated sewerage service and connect 28 existing homes in Reckleben Street to the network and further enabled several vacant lots to be developed including 'The Paddock', an eco-village, 1.4km from the centre of Castlemaine.

The Domestic Wastewater Management Plan 2012-2015 took a pragmatic approach and included a list of actions, informed by four overarching priorities:

1. Monitoring and compliance
2. Information management
3. Communications and engagement
4. Strategic management

Importantly, the Domestic Wastewater Management Plan for 2012-2015 led to work being undertaken to integrate Council's databases and geographical information systems to enable better records management and accountability, and established an annual Onsite Wastewater Management System monitoring and compliance program.

The monitoring and compliance program commenced in 2012 and areas targeted for assessment were based on the potential for onsite wastewater to pose public and environmental health issues. Attributes that were taken into consideration in targeting certain areas including:

- Concentration of dwellings;
- Small lot sizes;
- Commercial premises;
- Assumed age of systems and likelihood of greywater discharge to gutter;
- Proximity to water courses;
- Unsewered pockets within, and on the edge of, sewerage townships

During the implementation of the monitoring and compliance program from 2014 - 2017, 452 properties were assessed throughout Mount Alexander Shire in the following townships:

- Elphinstone (50)
- Taradale (96)
- Guildford (66)
- Vaughan (27)
- Barkers Creek (17)
- Welshmans Reef (38)
- Harcourt (10)
- Fryerstown (73)
- Baringhup (75)

Project reports and data relating to inspections and assessments were provided to Council in 2014, 2015 and 2017 assisting us to further build a wastewater profile for Mount Alexander Shire that will provide and inform appropriately targeted strategic work relating to the management of onsite wastewater management systems and wastewater throughout the Mount Alexander Shire.

Domestic Wastewater Management Action Plan 2018-2022

In 2019, an external agency was engaged to complete a number of actions within the Domestic Wastewater Management Action Plan 2018-2022, building knowledge on the existing domestic wastewater profile of Mount Alexander Shire, with a focus on Maldon and surrounds.

A total of 88 properties were assessed throughout 2019 and 2020. Where an onsite wastewater management system was in operation, information relating to the system type, age, location and functionality was recorded, a maintenance and pump out schedule developed and the system was allocated a risk rating of low, medium or high.

Low Risk - Effluent was retained on site, the system was less than ten years old, there is a record of the system, location of the system is known, and the property is greater than 1000 m².

Medium Risk - Effluent was retained on site, the system is ten to 25 years old, there is a record of the system, the system location is known, there is a record of pump out, servicing or maintenance within last five years, the property is greater than 1000m² and less than 4000m².

High Risk - Effluent is being discharged offsite, system is more than 25 years old, there is no record of the system, the system location is not known, there is no record of pump out, servicing or maintenance within last five years, the property is less than 1000m² and any upgrade cannot be contained onsite.

Due to the impacts of the COVID-19 pandemic, the final action relating to engagement with Coliban Water to identify properties where connection to reticulated sewer is now available was unable to be completed. It is recommended that this action be carried forward into the new plan and efforts are undertaken to engage with Coliban Water in determining connection points available, connections made and comparing those results with properties known to contain an onsite wastewater management system.

Project outcomes:

- 88 properties assessed
- Five properties inspected were found to be connected to reticulated sewer
- 36 data points were collected for each property
- 70 systems were conventional septic tanks that discharged into trenches
- Ten systems were secondary treatment systems
- Eight systems could not be identified
- 70 percent of systems were greater than 25 years old
- 37.5 percent of all properties inspected indicated obvious signs of failure or non-compliance with current standards.
- 60 percent of properties assessed are serviced by a private water supply
- 60.2 percent of systems were assessed as low risk
- 19.3 percent of systems were assessed as medium risk
- 20.5 percent of properties were assessed as high risk

During this inspection and assessment process, it was identified that there was a general lack of awareness about how often a septic tank should be pumped out. Discussions with home owners prompted many to have their septic tank pumped out as a precaution. Educational information brochures provided during assessments were well received and many home owners expressed interest in learning more about their onsite wastewater management System.

Monitoring and Compliance Program

The annual monitoring and compliance program includes writing to residents in identified inspection area/s, an onsite assessment, recording data and spatial information into geographical information systems, and the development of a final report and recommendations.

Whilst implementation of the monitoring and compliance program has been beneficial in identifying problems and recording information relating to the wastewater profile of the municipality, further work can and will be undertaken to address areas of concern as they arise.

This Plan includes an action to continue to resource and implement an ongoing monitoring and compliance program aimed at inspecting an annual sample of at least twenty onsite wastewater management systems.

Properties to be inspected will be identified using a risk-based approach and will focus monitoring on known higher-risk systems and localities as previously identified. Any further properties identified as being high-risk or displaying signs of failure will be recorded and appropriate measures will be taken to address concerns.



Risk-Based Management Approach

The Environment Protection Authority guidance documents used to plan for and assess onsite wastewater applications are often interpreted as legislation rather than guidance as intended.

Ensuring this Plan uses a strategic, risk-based approach in conjunction with guidance from such documents enhances Council's capacity to achieve suitable and sustainable outcomes and avoids confusion for staff and developers.

Considering risk

Council consider the following four risk categories in order to plan for and manage domestic wastewater risk in the municipality. The four risk categories are:

1. Existing onsite wastewater management systems in sewerred areas;
2. Future development in sewerred areas;
3. Existing onsite wastewater management systems in unsewerred areas;
4. Future development in unsewerred areas.

Consideration of the above risk categories:

- Guides the requirement for a land capability assessment;
- Provides an enhanced inspection, audit and compliance program focused on higher-risk areas and systems;
- Allows for the ability to follow up on maintenance and pump-outs of installed systems;
- Enables ongoing and consistent reporting and liaison between Council and Coliban Water and Goulburn Murray Water; and
- Outlines a range of education and public awareness initiatives for the inspection program and for the basic domestic system maintenance and monitoring requirements.

More information about the four risk categories can be found below:

Risk category 1: Existing Onsite Wastewater Management Systems in sewerred areas

Council will work with Coliban Water to identify properties that have failed to connect to reticulated sewer where it is available. In the event that a secondary treatment onsite wastewater management system has been installed, it may be retained until such time as it fails or subdivision is proposed. The system must be maintained as per the permit and copies of maintenance reports forwarded to Council.

Onsite wastewater management systems must be assessed whenever a premises extension is proposed and a connection to sewer will be requested if required.

Any systems identified in a sewerred area are to be mapped on Council's mapping system so that it is clearly visible to both Statutory Planning and Public and Environmental Health staff when assessing applications.

There is currently no formal process for connection to sewer as it becomes available due to sewer extensions. Council and Coliban Water need to strengthen their policy relationship in this regard, noting the position statement in this Plan.

Risk category 2: Future development in sewer areas

New developments in sewer areas can dispose of effluent in the following ways:

- Connection to the reticulated sewer system;
- Connection to an Environment Protection Authority licensed private sewer system maintained by a proprietary company;
- Installation of a greywater treatment or recycling system and/or dry composting toilet in compliance with Environment Protection Authority Publication 891.4.

The connection to sewer must comply with the requirements of Coliban Water.

Permanent greywater irrigation systems in sewer areas can only be installed with a permit from Council. The permit can only be granted if the property has sewer connected, and toilet and kitchen wastewater will be permanently discharged to sewerage. These systems may be used only during dry periods in accordance with Environment Protection Authority Publication 891.4, therefore the option to divert back to the reticulated sewer system must be available and maintained. A suitable backflow prevention device must be fitted as part of the greywater treatment system. The permit will include installation and maintenance conditions.

Waterless composting toilets may be installed if the property is connected to reticulated sewer in accordance with Environment Protection Authority Publication 891.4. A permit from Council is required.

Risk category 3: Existing Onsite Wastewater Management Systems in unsewered areas

Strategies to manage existing wastewater systems in unsewered areas of Mount Alexander Shire include:

- Ongoing compliance programs to identify higher risk properties and developing protocols for rectifying non-compliances;
- Assessing planning and septic applications for new developments and where premises extensions are proposed, requesting upgrades where required;
- Advocate for alternate solutions where there are numbers of non-compliant systems, for example, where a centralised effluent disposal system or reticulated sewer may be considered;
- Provide advice for strategic planning on areas of concern and likelihood of further development if areas are not connected to a reticulated sewage system;
- Respond to nuisance complaints from system owners or general public as deemed appropriate.

Where a premises extension or additional plumbing fixtures are proposed, the existing onsite wastewater management system, land size and proximity to waterways need to be taken into account.

Under the Plumbing Code, fixtures cannot be plumbed to a non-compliant system.

The location, size and type of system will need to be verified. No part of the system is to be built over. Wastewater systems are generally sized on the potential occupancy of the premises. Where an extension could increase dwelling occupancy the onsite wastewater management system may need alterations to accommodate the increase. A plumbers report on the type, location, and current operating status of the system should accompany an application. In the event that a new system is proposed the applicant should seek the advice of an Environmental Health Officer regarding the need for a land capability assessment.

Applications for extensions to existing premises that impact on wastewater generation where setback distances cannot be met are unlikely to be approved. Additionally, extensions that impact on the ability to retain a reserve area are also unlikely to be approved.

Council's Domestic Wastewater Management Plan procedure manual includes a checklist for assessing existing systems, steps for following up non-compliances and template letters.

Risk category 4: Future development in unsewered areas

The provision of reticulated sewage systems is important in supporting smaller residential lot and commercial development. Issues arise in unsewered towns as they are generally older settlements made of smaller lots zoned for residential use. Historically, township lots were established without consideration of sustainably treating and retaining wastewater within property boundaries.

Appendix 1 outlines the process of assessing unsewered townships in regards to growth both with individual onsite wastewater management systems and reticulated or community sewage systems.

In unsewered areas, recognising wastewater requirements at the planning permit application stage is a vital step to ensuring sustainable development.

The decision making matrix in Table 1 below was developed as a guide for use by Environmental Health Officers, Planners and property owners/developers and has been in use for a number of years, remaining unchanged. The matrix indicates information that may be required to accompany a planning permit application that precedes an application to install an onsite wastewater management system. It does not replace the need to assess individual proposals, and further advice should be sought from an Environmental Health Officer prior to any application being lodged.

Proposals need to be suitable for the selected lot. Some lots will not be able to accommodate onsite wastewater management system. Where reticulated sewer is within proximity and onsite wastewater treatment poses a high risk, connection to sewer will be Council's recommendation.

Where onsite wastewater management is proposed on commercial or public premises extra consideration must be made in respect to the design, capacity and ongoing maintenance of the system.

Premises dealing with food or other organic matter will need to take into account high and irregular organic loads.

The organic loading rates must be calculated relevant to the size the system. Premises that have high peak use periods will need a system designed to cope with these periods.

All unsewered, residential subdivisions should be accompanied by a land capability assessment.

A land capability assessment should contain enough information for Council Environmental Health Officers to make an informed decision about a particular proposal. The content of the land capability assessment should reflect the number of limiting factors and risks associated with both the land and the proposal.

Table 1 provides guidance on the level of detail required in a land capability assessment. Overall assessment is based on the highest level of risk for all features considered. For example, if most features were low risk but one was high risk (e.g. less than 100m from a watercourse) then the development would be assessed as high risk. In cases where an alternate development plan could affect the risk outcome, this information should be provided by the environmental health officer. For example if the highest risk factor is proximity to a watercourse the applicant should be advised that by locating the development more than 100m from the waterway the risk could be reduced. The table is a guide and the assessment of acceptable risk will not guarantee that a permit will be granted as the environmental health officer will also consider the specifics of the setting and proposal.

A reserve area will be required for any development regardless of the system installed. Reserve areas give a backup area in the event that a wastewater field fails or requires resting. Reserve areas are required for trench and low pressure effluent distribution systems in the Code of Practice but in the last revision the requirement to have one for subsurface irrigation was dropped. This was based on the premise that subsurface irrigation does not fail or require resting. Most subsurface irrigation has only been installed in the previous ten years so the premise has not been adequately tested. Also, there have been cases where irrigation has failed due to unexpected weather patterns and increased loads. As applications are assessed, to ensure wastewater can be sustainably treated and retained on-site, enforcing reserve areas for all systems is imperative to future-proofing developments.

Council's Domestic Wastewater Management Plan procedure manual outlines how applications are assessed and provides conditions for permits to install and maintain new systems.

Table 1: Decision making matrix for future development in unsewered areas

Feature	Low levels of management required	Medium levels of management required	High levels of management required
Land Capability Assessment requirements	LCA to the satisfaction of the EHO	LCA to the satisfaction of the EHO – must address limiting factors	Comprehensive LCA required - refer to Victorian LCA Framework
Overall assessment is based on the highest level of risk for any one of the features below e.g. if the property has more than 6 bedrooms it is high risk			
Distance to potable supply reservoir	>1km	500m-1km	<500m
Community building or infrastructure * Scale & type to be taken into consideration	No	Yes	Yes
Commercial use * Scale & type to be taken into consideration	No	Yes *	Yes *
House size	1-4 bedrooms	5-6 bedrooms	>6 bedrooms
Lot size	>2 hectares	0.5 – 2 hectares	<0.5 hectares
Availability of town water	No	Yes	
Setback to water way in potable water supply catchment (within 1km of reservoir)	>200m	100-200m	<100m
Setback to water way in potable water supply catchment	>100m	80 -100m	<80m
Setback to non-potable water way	>100m	60-100m	<60m
Setback to unmarked drainage line	>40m	20-40m	<20m
Slope	<10%	10-20%	>20%
Potential volume of wastewater	<1000L/D	1000-2000L/D	>2000L/D

Actions

In order to implement our commitment to sustainable onsite domestic wastewater management, Council will implement a range of actions as outlined in the table below.

Action	Lead Agent	Partners	Timeline	Budget	Indicator
1 Prepare an annual Domestic Wastewater Management Plan compliance and monitoring report, provide an update to Council and make the report available to agencies on request.	MASC	EPA, GMW, CW	Annual, as part of financial reporting	Existing	Report finalised and distributed prior to the end of each financial year.
2 Convene a six-monthly meeting with Coliban Water, Goulburn Murray Water and the Environment Protection Authority to: a. Share information such as: opportunities to develop joint initiatives b. Provide updates on relevant projects and changes to sewerage areas; c. Review the need for reticulated sewerage extensions; d. Review options and advocate for reticulated centralised sewer systems in unsewered townships where density of Onsite Wastewater Management Systems are having a negative impact; e. Review data, identify properties that have sewer available but are not connected and develop a program to work towards connection. f. Identify options to streamline referrals processes; g. Review processes for assessing subdivision and dwelling applications in unsewered areas, including clarifying the feasibility of connection to sewer. h. Review strategies and opportunities for assessing and reducing risk in unsewered towns as outlined in the plan. i. Other business as it arises and is suggested by attendees.	MASC	CW, GMW, EPA	Every March and September	Existing	Meeting held and minutes and actions distributed.
3 Maintain up-to-date Domestic Wastewater Management Plan information on Council's public website including links to relevant Environment Protection Authority websites, information for existing residents and for people proposing to build or buy in unsewered areas.	MASC	None	Ongoing	Existing	Information included in new residents' kits and Council website.

Action	Lead Agent	Partners	Timeline	Budget	Indicator
4 Review and update the Domestic Wastewater Management Plan every five years.	MASC	DWMP Ref. Group	2026	\$25,000 once every five years – managed within current Public and Environmental Health budget	Plan reviewed and updated after five years.
5 Continue to resource and implement an annual compliance and monitoring program aimed at inspecting an annual sample of at least twenty Onsite Wastewater Management Systems on a risk-based priority to ensure that sites with a permit have a certificate to use and focus monitoring on known higher risk systems or localities.	MASC	CW, GMW, EPA	Every March and September	Existing	Meeting held and minutes and actions distributed.
6 Review procedures, forms and powers to ensure consistency with changes to the Environment Protection Authority's regulations and requirements	MASC	MAV, EPA, DHHS	Ongoing	Existing	Procedures and forms updated to reflect new approval system
7 Organise to have plan audited by an independent and accredited auditor approved by GMW	MASC	GMW	2026	\$3000 every three years	Audit undertaken
8 Investigate options to develop a spatially referenced Onsite Wastewater Management System database linked to rates and health databases as a starting point for collecting and storing more information about existing and new Onsite Wastewater Management Systems and enabling the allocation of risk ratings to target future management initiatives.	MASC	GMW EPA	Existing	Existing	Discussions held with IT and other relevant staff and options for implementation outlined and understood.

Action	Lead Agent	Partners	Timeline	Budget	Indicator
9 Continue to advocate for local government to levy a charge for domestic wastewater management.	MASC	MAV, EPA, EHPA, GMW	Ongoing	Existing	Correspondence sent
10 Participate in the Environmental Health Professionals Australia Special Interest Group meetings to build knowledge, share experiences and explore training opportunities with other environmental health officers regarding domestic wastewater management and provide value to the update of this Domestic Wastewater Management Plan.	MASC	EHPA	Ongoing	Existing	Member of Environmental Health Professionals Australia Special Interest Group and attendance at meetings either online or in-person
11 Convene an annual internal meeting of Council's Public and Environmental Health and Planning teams to strengthen interdepartmental relations and discuss: <ul style="list-style-type: none"> a. Opportunities to incorporate the DWMP into the planning scheme; b. Upcoming settlement planning projects c. Assessment and decision process improvements related to town planning and onsite system management d. Case studies that illustrate examples of good processes, decisions and outcomes, plus those that need improvement e. Other issues and improvements. 	MASC		Ongoing	Existing budget for Public and Environmental Health and Planning	Meeting held annually
12 Liaise with Council's Emergency Management team to assist in assessing Domestic Wastewater Management Systems that have been affected by any emergency event.	MASC	Council's Emergency Management team	As required	Existing	Issues identified after an emergency event are assessed and managed appropriately.

Monitoring, Evaluation and Reporting

The Plan will be reviewed by an independent accredited auditor every three years. Goulburn Murray Water must approve of the auditor. Copies of the audit report will be distributed to relevant stakeholders. In accordance with page four of the Ministerial Guidelines a process of review and updating (if necessary), the Plan will occur every five years.

Appendix 1 - Wastewater Options in Unsewered Township Areas

A range of problems can occur in unsewered townships when wastewater systems fail or discharge off-site. The most significant is the issue of public health which can arise when wastewater is not being adequately treated and disposed of, creating the risk of exposure to waterborne pathogens. The most common problem is the loss of amenity through unpleasant odour, unsightly pools of wastewater and drains choked with rank weeds.

Age and use may render disposal fields less able to cope with the wastewater loads delivered to them. Poor maintenance of septic tanks can result in build-up of sludge so that odour problems can be exacerbated and sediment carryover can hasten field decline.

Many old wastewater systems are “split”, designed to retain blackwater on site and discharge all greywater to a gutter or neighbouring land. This untreated waste can find its way to local waterways or groundwater, and can represent a threat to both human and environmental health.

Problems in townships located on soils with low percolations are likely to manifest as pooled wastewater over disposal fields or movement of greywater to town drains. Towns on very sandy soils may still have problems but they could be “hidden” - such as bore water contamination when polluted waters move rapidly through profiles to access groundwater reserves. It is not safe to assume that no obvious wastewater problem means that there are no health and environmental risks. Problem sites could be those with evidence of failure or could also be those mapped as “environmentally sensitive” in the township reports.

Highlighting concerns that can arise in unsewered towns is simple, finding a solution is far more complex. Some possible options for dealing with wastewater are discussed below. There are also suggestions about a range of options that could be considered in the short and long term for some unsewered areas.

Strategies to Consider

If an unsewered community is to remain as a viable township then one or more options may have to be considered.

For small towns full reticulated sewer or a Common Effluent Disposal scheme may not be realistic, and an approach aimed at “preventing the problem getting worse” will be necessary - existing systems must be supported to work as best they can. This may also be the short term solution for townships awaiting connection to sewer.

As part of this approach, Council could look at the following strategies:

- Information gathering;
- Reducing risk of onsite failure;
- Greywater management
- Waterway monitoring
- Management of new developments
- Ongoing review.

These strategies are discussed in more detail below.

Information gathering:

Accurate information assists with good planning decisions and it is suggested that data be gathered on:

1. Township:

- population numbers
- Population patterns (seasonal, weekend etc.)
- population trends (is town growing or contracting)
- industrial water use
- stormwater infrastructure

2. Individual properties (concentrating on environmentally sensitive developed blocks and record:

- Block use (residential / commercial/ community facility etc.);
- block size;
- house size (BR);
- occupancy (numbers, full-time or intermittent);
- wastewater volumes generated (estimated);
- wastewater treatment & disposal system;
- field and tank location;
- pump out history;
- Any "available" area for field renewal or extension.

3. Record Keeping - council should maintain records of:

- individual property data (as above);
- pump out programs for septic tanks;
- maintenance & monitoring programs for aerated plants;
- ownership changes;
- extensions and alterations;
- any anecdotal evidence about "failing systems" or "problems" in particular locations in the town

Reducing Risk of Onsite Failure:

Failures are most likely to occur on residential, commercial and public developments in areas where limitations increase the risk of system failure. The following management approaches could be considered:

- pump out of tanks on high risk sites - pump out frequency to be based on risk and monitored over a five year period;
- Review township situation after 2022;
- Education delivered during the audit and assessment program needs to be increased for higher risk sites.

Existing resources can be used to highlight the following points:

- Water conservation (lower wastewater volumes should reduce impact of onsite disposal);
- Water use patterns (try to spread water use across the whole week);
- Septic tank education;
- Disposal field maintenance;
- Dedicated use of area;
- Protection from run-on & run-off;
- Vegetation (species, density, proximity to field);
- Problem detection & action;
- use of greywater onsite;
- Education regarding destination of household wastewater (e.g. potential to access waterways or bore supply).

Greywater Management:

Greywater in gutters is more likely to create a health problem and cause amenity loss if it is left to pool. To allow wastewater to move quickly away from the township Council should:

- Clear gutters of debris, silt and vegetation;
- Where necessary reset the gutters to allow rapid flow;
- Clear out stormwater drains;
- Install traps for debris where stormwater meets a creek.

Waterway Monitoring:

Waterways can essentially become de facto wastewater treatment systems for the stormwater and greywater delivered from town gutters. Whilst the ideal is to not have greywater enter, a range of measures must be put in place if a creek is receiving town greywater:

- Relevant authority (GMW, CMA, DELWP & Coliban Water) involvement;
- Regular monitoring of creek water quality (faecal coliforms & nutrients) upstream & downstream of town
- Ongoing review of the situation and rapid response to unacceptable changes

Management for new developments:

- First option is connection to reticulated or community sewerage systems;
- LCA to be undertaken as per Council's DWMP;
- Permits and installations to be as per the DWMP and Procedure Manual;
- Reserve areas to be required for all Onsite Wastewater Management Systems.

Ongoing Review:

The ideas above could be part of an approach to wastewater management in unsewered towns. They do not all comply with Environment Protection Authority guidelines but are born of necessity. These strategies are an attempt to improve a difficult situation. They will need constant review and modification as township situations change. A town-based review group could be established as follows:

- Establish a working group comprising Council, GMW, CMA, DELWP and Coliban;
- Review township situation in two to five years for:
 - Growth;
 - Water use patterns;
 - Stream quality.
- Determine wastewater program for next five years.

The strategies that have been discussed above are now presented in tabulated form on the next page.

Summarised Strategies and Comments For Unsewered Towns

Number	Option	Comments
1	Investigate full reticulated sewerage (triggered by population size and density)	<ul style="list-style-type: none"> • expense • time delay • extravagant for small populations • problems in hilly terrain • difficulties may arise with low flows
2	Investigate Community Effluent Disposal	<ul style="list-style-type: none"> • expense (though less than above) • cost for owners (unit, pump, power) • can target particular parts of townships • less disruption than full sewer • can more readily negotiate obstacles
3	Waterway Monitoring	<ul style="list-style-type: none"> • CMA & DEWLP input required • may involve private land • will require very high management levels
4	Identify problem sites and <ul style="list-style-type: none"> • install an aerated system or • extend existing fields or • create a new “fresh” field 	<ul style="list-style-type: none"> • may be little available area = no solution? • problems locating & connecting to existing system • disruption to buildings/garden/paths etc. • high owner expense • high level of Council involvement if a lot of upgraded systems are installed (maintenance and monitoring requirements)
5	Start pump out program. Add system types, locations and disposal methods to Council’s database Council to follow up on systems where pump outs and maintenance records are not submitted	<ul style="list-style-type: none"> • relatively cheap for owners • requires big commitment from Council • benefits slow to become apparent
6	All new development to be sustainable and comply with EPA Publication 891.4. Reserve wastewater fields for all new development. New wastewater systems to be on strict pump out or maintenance & monitoring programs.	<ul style="list-style-type: none"> • will not address existing problems • will reduce likelihood of new developments adding to township wastewater problems
7	Education program	<ul style="list-style-type: none"> • to reduce wastewater loads • to improve management of treatment & disposal systems • to heighten awareness of risks
8	Do nothing	<ul style="list-style-type: none"> • problems could escalate

Possible Approaches for Individual Township Areas

The following table brings together townships (both sewerred and unsewerred) reviewed as part of the Mount Alexander Shire Domestic Wastewater Management Plan.

The risk rating takes into account the size, location, zoning, lot size and growth rate of the town coupled very broadly with soil and landscape features. Risk rating one is regarded as a low risk for continuing unsewerred development while Risk Rating two is moderate and Risk Rating three is high.

For each township, a range of strategies (identified by number) are suggested to manage wastewater issues in the short and long term. These strategy numbers relate to tabulated options which appear in the preceding table.

If anticipated growth patterns change, the strategies will need to be reviewed.

Town	Risk Rating	Expected growth	Short term strategies	Long term strategies
Elphinstone	2	Possible	6 & 7	2, 4, 5, 6 & 7
Taradale	2	Possible – most likely seasonal	5, 6 & 7	2, 3, 4, 5, 6 & 7
Yapeen	2	Minor – but land available	5, 6 & 7	2, 4, 5, 6 & 7
Guildford	2	Minor but permanent	3, 5, 6 & 7	2, 4, 5, 6 & 7
Barkers Creek	2	Minor	3, 5, 6 & 7	2, 4, 5, 6 & 7
Welshmans Reef	2	Minor seasonal	3, 5, 6 & 7	2, 4, 5, 6 & 7
Newstead extn	2	unsewerred pockets	5, 6 & 7	1, 2 & 4
Campbells Creek extn	2	unsewerred pockets	5, 6 & 7	1, 2 & 7
Fryerstown	2	Minor	4, 5, 6 & 7	4, 5, 6 & 7
Vaughan	2	Minor	4, 5, 6 & 7	4, 5, 6 & 7
Ravenswood South	2	Minor – larger lot sizes	5, 6 & 7	5, 6 & 7
Maldon	2	unsewerred fringes	5, 6 & 7	1, 2, 6 & 7
Baringhup	1	Minor seasonal	6 & 7	4, 5, 6 & 7