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**Domestic Wastewater Management Plan**

**2012 – 2015**

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# Introduction

‘Domestic wastewater’ as defined within the Environment Protection Act 1970 (section 53J) ‘…means any waste containing human excreta or domestic wastewater…’. For Council, this means any wastewater from the toilet, bathroom, kitchen or laundry of any premises that generates up to 5000 litres of wastewater per day.

In functioning domestic wastewater management systems (including conventional septic tanks, aerated wastewater treatment systems, composting toilets, sand filters, reed beds or wetlands), domestic wastewater can be treated and safely disposed of on-site. Modern, maintained domestic wastewater systems provide a viable, often cost-effective and sustainable alternative where reticulated sewer is not available.

However, domestic wastewater systems that are inadequate or malfunctioning pose serious human health and environmental threats. More specifically, the risks associated with domestic wastewater management can be categorised as:

* Public Health
  + Drinking water supplies becoming contaminated with chemicals and bacteria from effluent as a result of poorly drained soils; small lot sizes; high usage; ageing systems; and a lack of proper maintenance of septic systems
  + People coming into contact with recreational water that has been contaminated by domestic wastewater face significant risk of illness
* Environmental
  + Malfunctioning septic tank systems contribute high rates of nitrogen and phosphorous to water catchments due to surface run-off
  + Malfunctioning septic tank systems create direct bacterial contamination of the environment with ten times the amount of *E coli* found in catchments near residential areas compared to catchments without residential areas
* Economic
  + Trying to alleviate years of environmental contamination is costly and involves overcoming a host of practical issues
  + In the event of a contamination incident there is the cost of advising residents and visitors to the area of the risk, managing community anxiety and the indirect costs associated with the perception that the area is unsafe
* Legal
  + Council has statutory duties under Victorian State Government to prevent off-site discharge of domestic wastewater
  + Council has a duty to exercise its enforcement powers where it knows there is a breach of legislation and there is a likelihood of injury

The relevant stakeholder role and responsibilities for the management and maintenance of domestic waste water systems in outlined in Appendix 1.

In 2006 the Department of Sustainability and Environment’s Country Towns Water Supply and Sewerage Program invited all regional and rural councils to apply for funds to undertake risk assessments that could be used to develop a state-wide understanding of the domestic wastewater profile and overall risk. The funding also included provision for the development of a Domestic Wastewater Management Plan (DWMP).

Council successfully applied for this funding and produced and adopted a DWMP in 2007. That plan came to an end in 2010. It’s implementation was limited in success. Of 46 actions, 15 (32%) were completed, 4 (9%) remain in progress and 27 (59%) have not commenced.

Recognising the ongoing importance of domestic wastewater management, Council’s statutory obligation to manage domestic wastewater and the potential risk posed by inadequate management, Council approved the development of a new plan as a part of the 2011-2012 Annual Plan.

This DWMP, which builds on the work achieved and the priorities identified under the 2007-2010 Plan, has the following purposes:

* To protect public health and the physical environment from the impacts of domestic wastewater
* To promote environmental sustainability by reducing the impacts of domestic wastewater on the local receiving environments
* To identify domestic wastewater management priorities and develop short and long term strategies for the implementation of these priorities
* To provide a mechanism for coordinated domestic wastewater planning, education and compliance monitoring by Council and other stakeholders

# Domestic Wastewater Profile

The Mount Alexander Shire Council is situated approximately 120 kilometres north-west of Melbourne and is approximately 1530 km2 in area. The Shire encompasses the major towns of Castlemaine and Maldon, has a population of approximately 17,500 and 8,200 private dwellings.



Numbers of septic tank systems

There are approximately 2763 septic tank systems within the municipality. It is important to note the assumptions made in the calculation of this figure. In Council’s 2007-2010 DWMP, the consulting firm In Focus estimated 2400 septics within the Shire. The current figure was generated by adding all known tank installations since 2007 to this figure of 2400. Council’s records of septic tank systems is incomplete and inconsistent, particularly pre-2005. It is highly likely that this figure is conservative, and does not include many older domestic wastewater systems. This is particularly problematic given that these aging systems are more likely to be failing and posing greater health and environmental risks. It is fair to say that the problem of incomplete records and knowledge is common among Victorian rural and regional councils.

Within the 2763 known septic systems in Mount Alexander, it is estimated that over 35% of installations are older than 20 years based on permit data and available age profiles and are conventional type systems with sub-surface disposal. The conventional septic tank systems installed after 1980 provided for all waste treatment while before this time systems provided for diversion of grey water. These earlier installations included provision of approved off-site discharge. This would not be permitted under current EPA regulations.

In 2007 Council’s consultants concluded that the number of systems discharging offsite (whether with or without approval) was unknown and would require further auditing activities. No such activities were carried out during the life of that Plan and are still required in order to more adequately assess the risk posed by ageing and failing systems.

Table 1 details the localities in which the known systems are distributed.

|  |  |  |  |
| --- | --- | --- | --- |
| **Township** | **Estimated number of septic tank systems 2007** | **Number of new permits issued 2007 – 2011** | **Estimated total number of septic tank systems** |
| Barfold | 36 | 7 | 43 |
| Baringhup | 61 | 10 | 71 |
| Barkers Creek | 91 | 12 | 103 |
| Campbelltown | 6 | 1 | 7 |
| Castlemaine (McKenzie Hill & Campbells Creek) | 30 | 69 | 99 |
| Chewton | 226 | 15 | 241 |
| Drummond North | 2 | 0 | 2 |
| Eastville | 3 | 0 | 3 |
| Elphinstone | 215 | 19 | 234 |
| Faraday | 31 | 5 | 36 |
| Fryerstown | 103 | 11 | 114 |
| Glenluce | 16 | 6 | 22 |
| Golden Point | 8 | 1 | 9 |
| Gower | 4 | 0 | 4 |
| Green Gully | 35 | 1 | 36 |
| Greenhill | 2 | 0 | 2 |
| Guildford | 124 | 17 | 141 |
| Harcourt | 274 | 23 | 297 |
| Irishtown | 2 | 0 | 0 |
| Joyces Creek | 7 | 0 | 7 |
| Langley | 23 | 7 | 30 |
| Maldon | 86 | 41 | 127 |
| Malmsbury | 3 | 1 | 4 |
| Metcalfe | 95 | 10 | 105 |
| Muckleford | 87 | 24 | 111 |
| Neereman | 1 | 0 | 1 |
| Newstead | 172 | 10 | 182 |
| Ravenswood | 14 | 1 | 15 |
| Redesdale | 23 | 2 | 25 |
| Sandon | 48 | 4 | 52 |
| Spring Gully | 3 | 1 | 4 |
| Strangways | 33 | 3 | 36 |
| Strathlea | 14 | 0 | 14 |
| Sutton Grange | 44 | 8 | 52 |
| Taradale | 207 | 25 | 232 |
| Tarilta | 6 | 0 | 6 |
| Tarrengower | 2 | 0 | 2 |
| Vaughan | 35 | 3 | 38 |
| Walmer | 25 | 4 | 29 |
| Welshmans Reef | 83 | 17 | 100 |
| Werona | 11 | 2 | 13 |
| Yandoit | 10 | 6 | 16 |
| Yandoit Hills | 9 | 0 | 9 |
| Yapeen | 81 | 6 | 87 |
| **Total** | **2,391** | **372** | **2763** |

**Table 1 Number of Known Septic Tanks per Township**

The number of new systems being installed is expected to remain constant at around 80 per year. The following chart shows the number of permits issued for installation and alteration of septic tank systems from 2001 to 2011. A total of 931 have been issued over a ten-year period.

Council’s 2007 – 2010 DWMP identified three towns as top priorities for improved domestic wastewater management. These towns were identified through a risk assessment approach by Council’s consultant. They were (in order of priority): Castlemaine (Reckleben Street area), Elphinstone and Taradale. Since the adoption of the 2007-2010 Plan Reckleben Street has been added to the Coliban Water Sewer Backlog Program. Coliban Water estimate this area will be connected to reticulated sewer in 2013.

For the life of this new Plan, the following areas are considered top priorities for immediate action and consideration for upgrades or transition to sewer:

1. Castlemaine (Tomkies Road and McGregor Streets)
2. Elphinstone
3. Taradale

In the absence of empirical evidence as to the exact number of failing or ‘risky’ systems across the Shire, these priority areas were identified based on their comparative:

* Number of septic systems in the population centre
* Proximity of those systems to drains and watercourses
* Allotment size
* Soil and land characteristics
* Degree to which the land is flood prone
* The types of system installed (where known, and largely estimated by the age of the dwellings)
* Age of installed systems (as per above)

Refer to Appendix 2 Findings of Risk Assessment for Priority Areas for more information.

# Key issues

Based on the above, the following four points present the key issues that need to be addressed in order to more sustainably manage domestic wastewater in Mount Alexander Shire:

1. Council’s septic tank system profile (in terms of numbers, location and types of septic tank systems) is incomplete and does not enable a thorough quantification of threats
2. The performance of septic tank systems and compliance with permit conditions by owners across the municipality is unknown. There is anecdotal evidence that septic tank systems are not being maintained, which points to the need for improved community knowledge of the effective management of septic tank systems
3. Council issues permits for installation of systems but has no organised compliance management services to ensure permit conditions are complied with by owners or information on the performance of these systems is maintained.
4. Council’s implementation of any DWMP requires monitoring, review and reporting to ensure that actions adopted by council are implemented within the assign timeframe.

These four key issues form the breakdown of actions that make up the key component of this plan:

* Information management
* Communication and engagement
* Monitoring and compliance
* Strategic management

Implementing these actions (over) will enable Council to fulfil the purposes of this document, align with existing Council directions and Strategy and fulfil our statutory requirements.

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# Action Plan

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Key Domestic Waste Water management Priority** | **Action** | **Lead agent** | **Partners** | **Timeline** | **Budget** | **Indicator** |
| * 1. Information Management | * 1. Implement a system for recording of permit conditions and compliance | Healthy Environments | IT  Database provider | June 2012 | $2000  (Funds already allocated as special project 2011-2012) | System in place |
|  | * 1. 1.2 Review IT systems to produce reports, reminder notices etc | Healthy Environments | IT  Database provider | June 2012 | Included above | System in place |
|  | * 1. 1.3 Investigate opportunities to maximise cross benefits all council databases including rates | Healthy Environments | IT  Finance  Infrastructure  Planning Building | Ongoing | Within existing budgets |  |
|  | * 1. 1.4Investigate generation of a data overlay on Geographical Information System of all known septic locations | Healthy Environments | IT | December 2012 | Within existing budget | System in place, ability to collect data and generate maps |
|  | * 1. 1.5 Populate database with new and existing septic tanks | Healthy Environments |  | Ongoing from July 2012 | TBD | Database being populated |
| 1. Monitoring and compliance | * 1. Provide advice for the development a program for the connection to sewer or upgrade of septic system in Council owned and managed buildings | Healthy Environments | Infrastructure  Coliban Water  Governance | June 2012 | Within existing budget | Properties identified |
|  | * 1. Advocate for legislative options for councils to address monitoring limitations. | Environmental Health Australia | Healthy Environments | Ongoing | Within existing budgets | EHA considers action |
|  | * 1. Implement a monitoring program on septic tank performance and permit condition compliance that includes reporting to stakeholders | Healthy Environments | Contractor | June 2012 then ongoing | $8,000.00 \*  (Funds already allocated as special project 2011-2012)  \*Ongoing funding will be required and will be subject to future budget allocations |  |
| 1. Communication and engagement | * 1. Develop a Domestic Wastewater Management communication strategy | Healthy Environments | Communications Officer  EPA  Other Councils  La Trobe University | June 2013 | $10,000.00  (subject to future budget allocation) | Communication strategy drafted, implementation commenced |
|  | * 1. Create and maintain stronger liaison with relevant stake holders particularly Coliban Water | Healthy Environments | Coliban Water  EPA  Goulburn Murray Water | Ongoing | Within existing budgets | Regular contact with all relevant stakeholders including receiving notification of recent sewer connections and extensions |
|  | * 1. Make recommendations to Coliban Water about high risk areas that would benefit from connection to sewer | Healthy Environments | Coliban Water | Ongoing | Within existing budgets | Recommendations made to Coliban Water as identified areas are included in the annual DWMP review. |
| 1. Strategic Management | * 1. Include domestic wastewater management improvements in relevant council strategic documents as they are created or reviewed (especially Public Health and Wellbeing Plan) | Healthy Environments | Community Development  All council departments | Ongoing | Within existing budgets |  |
|  | * 1. Seek external funding to boost resources for DWMP in the Shire | Healthy Environments | EMT  Coliban Water  Goulburn Murray Water | Ongoing | Within existing budgets | Funding applications submitted as appropriate |
|  | * 1. Complete and implement domestic wastewater policies and procedures | Healthy Environments | Building  Planning  Customer Service  Finance  Infrastructure  EPA  Coliban Water  Goulburn Murray Water | June 2013 | Within existing budgets | Policies and procedures adopted and implemented |
|  | * 1. Undertake annual review of DWMP | Healthy Environments |  | January 2013 | Within existing budgets | Report on implementation to DEI |

# Appendix 1 - Stakeholder Roles and Responsibilities

Relevant legislation, policies and standards

The list of legislative requirements regarding domestic wastewater management are summarised below.

**Environment Protection Act 1970**

The Environment Protection Act 1970 is the primary legislation that regulates and controls septic tank systems. It outlines municipal responsibilities for approving the installation, modification and use of septic tank systems, where the systems are designed to discharge up to 5,000 litres of effluent per day. Treatment systems that are designed for and/or produce more than 5,000 litres of effluent per day are scheduled premises under the Scheduled Premises Regulations and require Works Approval from the EPA for construction and an EPA discharge license to operate. The EPA Act also outlines the municipal annual returns lodgement process with the EPA.

**EPA State Environment Protection Policy (Waters of Victoria)**

This policy ensures that all residential subdivisions are provided with reticulated sewer access at the time of subdivision or are capable of treating and retaining the domestic wastewater within the boundaries of the proposed allotments. The policy also directs municipalities to use Environment Protection Authority’s (EPA) Septic Tank Code of Practice, when they assess the ability of proposed developments to retain wastewater within lot boundaries.

**EPA Septic Code of Practice**

This Code is the manual for the design, construction, selection, installation and maintenance of septic tank systems. It contains information on land capability assessment, treatment and disposal options, the permit process, septic tank design, construction and maintenance and effluent management.

**Public Health and Wellbeing Act 2008**

The Public health and Wellbeing Act 2008 states that it is the function of a Council to seek to protect, improve and promote public health and wellbeing in the municipal district. One of the ways Council can achieve this according to the Act is to ensure that the municipal is maintained in a clean and sanitary conditions.

**Water Act 1989 Part 9 s. 180 Septic tank permit applications**

The Water Act requires referral to water authorities if septic systems are proposed within an Authority’s sewerage district or area of interest. There is also the power under the Water Act to require an upgrade or maintenance at any time to septic tanks.

**Local Government Act 1989**

The Local Government Act empowers municipalities to enact local laws and set special charges for local government activities. Municipalities can use these powers to develop local regulations for wastewater management as long as these regulations are consistent with State policy and legislation and to raise revenue for its wastewater management programs.

**Australian Standards**

There are a number of Australian Standards which have relevance to the construction and design of wastewater disposal systems. These include:

AS/NZS 1546.1:2008 – Onsite domestic wastewater treatment units – Septic tanks

AS/NZS 1546.2:2008 – Onsite domestic wastewater treatment units - Waterless composting toilets

AS/NZS 1546.3:2008– Onsite domestic wastewater treatment units – Aerated wastewater

AS/NZS 1547:2000 – Onsite domestic wastewater management

AS/NZS 3500- National Plumbing and Drainage - Domestic Installations

**EPA Code of practice – Onsite wastewater management**

This document provides direction for the management of small onsite wastewater treatment systems. It contains information on land capability assessment, treatment and disposal options, the permit process, septic tank maintenance, and effluent management.

**EPA Land Capability Assessment for Onsite Domestic Wastewater Management 746**

This bulletin aims to ensure that the capability of the land for onsite wastewater disposal is assessed at the rezoning and subdivision stages of the planning process when it is not intended to provide the development with reticulated sewerage. The assessment should be used to ensure that unsewered residential development proceeds only on land that has an acceptable capability for sustainable wastewater management.

Roles, responsibilities and key documents of stakeholders

A list of the relevant stakeholders and their roles and responsibilities are outlined below.

**Mount Alexander Shire Council**

While the EPA provides guidance documents and maintains a list of approved types of on-site wastewater treatment systems, it is the local council that is responsible for approving the installation. Council is also responsible for ensuring that the conditions of the permit are met, as well as basic human health standards where no permit conditions were issued. This includes responsibilities such as, ensuing that all on-site domestic wastewater systems are performing adequately, and that treatment systems are maintained in accordance with the permit conditions.

Mount Alexander Shire Council is responsible for collating maintenance records for all types of on-site

domestic wastewater systems and forwarding the results to the EPA on an annual basis as required

under the EPA Act.

The Mount Alexander Planning Scheme takes into consideration sites where reticulated sewerage is unavailable, and requires that land use and development proposals demonstrate that, amongst other things, all effluent will be treated and contained on site. Conditions are applied to planning permits to protect and enhance the environment. A range of overlays are also in place to provide additional protection in some areas.

**Mount Alexander Council Plan 2009-13**

One of the objectives of Mount Alexander Shire Council’s Council Plan 2009-13 is to protect our natural environment and minimise our impact on non-newable resources. Whilst the strategies and indicators do not include the impacts of poorly maintained and managed wastewater systems this could be considered for future plans.

**Environment strategy 2011-2014**

Has undertaken to demonstrate what can be achieved in environmental sustainability by incorporating objectives to facilitate Council’s ability to lead by example. In terms of domestic wastewater an objective of the plan is to minimise pollution from septic systems in Council-owned and managed buildings

**Health and Wellbeing Plan 2010-2013**

Councils Health and Wellbeing Plan does not specifically link to domestic wastewater however the plan aims to ‘provide the community with opportunities to achieve optimum health status. Whilst the focus of the Health and Wellbeing Plan has moved away from basic public health principles it would be useful to build links between this plan and the DWMP in future.

**Department of Sustainability and Environment**

The Department of Sustainability and Environment (DSE) is responsible for management of Victoria’s natural resources. DSE manage the County Towns Water Supply and Sewerage Program, which is part of he State Government’s Our Water Our Future action plan for sustainable water management. This program includes development of Domestic Wastewater Management plans. DSE is a referral authority under the Planning and Environment Act, Catchment and Land Protection Act and the Water Act

**Environment Protection Authority**

The Environment Protection Authority (EPA) has a statutory responsibility to oversee the protection of the environment. The EPA publishes a number of policies, and guidance documents for local governments, community members and other stakeholders in relation to domestic wastewater. The EPA also approves the domestic wastewater systems able to be installed in Victoria under the Certificate of Approval.

**Department of Health**

The Department of Health (DoH) administers the Public Health and Wellbeing Act 2008. DoH is responsible for providing advice to EPA and Local Government about public health policy related to wastewater management.

**Municipal Association of Victoria**

The MAV has undertaken works in partnership with Victorian councils, EPA Victoria, DSE, water authorities and other stake holders to develop a range of planning and management tools to assist council’s with the management of domestic water.

The Model Land Capability Assessment Report (MAV, 2005) provides an example of an all encompassing land capability assessment (LCA). It is aimed at providing environmental health officers with a suitable template by which to assess LCA reports, and simultaneously provide LCA assessors with a model that generally provides adequate information to the environmental health officers for making a sound judgment on an application.

**North Central Catchment Management Authority**

The North Central Catchment Management Authority (NCCMA) is responsible for the sustainable development of catchments, floodplains and waterways. The NCCMAs core business function is the delivery of the Central Regional Catchment Strategy (2003-2007) but also has functions under the Environment Water Reserve created under the Water Act.

**Goulburn Murray Water**

Water authorities are generally responsible for:

* delivering irrigation water to irrigators
* delivering bulk water supplies to regional urban water authorities
* harvesting water from water supply catchments
* dams on waterways
* assessing applications referred to them from Council in relation to the likely impacts on their water supply catchments

Water authorities can be affected by land use activities within water supply catchments, including unsewered developments. Under the Planning Scheme planning referrals are forwarded to GMW if triggered by an overlay or if the land is in a special water supply catchment area. This applies to approximately 95% of the shire.

**Coliban Water**

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

**Landholders**

Those land holders with on-site wastewater treatment systems are responsible for:

* Connecting to a sewerage system where it is available (unless otherwise exempted)
* Obtaining a septic tank permit before a building permit is issued and installing a system
* Obtaining a certificate to use once the system has been installed
* Obtaining a permit to make alterations to an existing septic system
* Insuring system installers are licensed plumbers who have specialist knowledge to install the nominated system.
* Maintaining existing systems, including de-sludging at least every three years, or when the tank becomes half full of sludge and any specified monitoring conditions
* Ensuring effluent absorption area remains clear from development, unsuitable vegetation, impermeable surfaces etc

**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 assesses 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 system installers**

Onsite wastewater systems must be installed by a licenced plumber. Plumbers must ensure that the wastewater system complies with the relevant EPA certificate of approval, 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 certificate of approval and council permit conditions, and provide the council with a certificate of compliance and other paperwork requested in the permit to install.

# Appendix 2 – Findings of Risk Assessment for Priority Areas

This DWMP, drawing from the 2007-2010 Plan, has determined Elphinstone, Taradale and the Tomkies Road and McGregor Street areas of Castlemaine as high priority areas for monitoring and compliance, and perhaps sewer. This Appendix outlines the rationale for each area being allocated a high priority.

Elphinstone key threat summary:

* 30% of township allotments are smaller than 1000m2
* 80% of septic tank systems are more than 20 years old
* The town is located in the Lake Eppalock catchment
* There is evidence of offsite discharge and odour
* The slope of the land is high
* The rainfall is high

Taradale key threat summary:

* 42% of township allotments are smaller than 1000m2
* 85% of septic tank systems are more than 20 years old
* The town is located in the Lake Eppalock catchment
* Back Creek flows through the centre of town
* There is evidence of offsite discharge and odour
* There is evidence of contaminated waterways
* The slope of the land is high
* The rainfall is high

Tomkies Road, Castlemaine, key threat summary:

* 50% of allotments are smaller than 1000m2
* 87.5% of septic tanks are more than 20 years old
* The area is in a special water supply water catchment area
* There is evidence that systems discharge grey water offsite
* The rainfall is high

McGregor Street, Castlemaine, key threat summary:

* 70% of allotments are smaller than 1000m2
* 100% of septic tanks are more than 20 years old
* The area is in a special water supply water catchment area
* There is evidence that systems discharge to gutters
* A marked waterway is in proximity, and downslope, of the discharging properties
* The rainfall is high