Mitchell Shire Council Onsite Wastewater Management Plan

2024-2029

MITCHELL
SHIRE COUNCIL

Plan Number

20230510

Directorate

Advocacy and Community

Owner

Manager Community Amenity

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Acknowledgement of Funding

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Contents

Accessibility

In line with the Victorian Government Accessibility Guidelines, Mitchell Shire Council has formatted this document to increase its readability and accessibility to the wider community.

It has been written in plain English, as concisely as possible, and avoids the use of acronyms (initialisms) wherever possible.

Acknowledgement of Country

Mitchell Shire Council respectfully acknowledges the Traditional Custodians of the lands and waters of the municipality, those of the Taungurung and Wurundjeri People.

We pay our respects to their rich cultures, their intrinsic connection to Country, and to their Elders, past, present, and emerging.

1 Introduction and Context

1.1 Introduction

Under Victorian legislation, all Councils that have Onsite Wastewater Management Systems within their municipality must develop and implement an Onsite Wastewater Management Plan.

This plan is to be developed in consultation with Water Corporations, the community, and other relevant stakeholders. The broad purpose of the plan is for Local Councils to identify public and environmental health risks associated with these systems, analyse those risks, and to set out strategies to minimise those risks within the context of their municipality. The plan represents a medium to long term vision of how the risks associated with these systems will be managed and regulated.

In 2014, Mitchell Shire Council published its second *Domestic Wastewater Management Plan*, and since that time, the Environmental Health, Local Laws, and Planning teams have implemented many of the strategies outlined in that plan into their day-to-day activities and procedures.

In the time since the last plan was developed, the Shire has grown and changed, with the southern urban corridor and larger townships seeing significant development. There has also been an increased focus on the impacts of climate change and protecting the natural environment that attracts many of our community to the area.

Council has a statutory duty in relation to the regulation of Onsite Wastewater Management under a number of pieces of legislation. The recent changes to the *Environment Protection Act 2017* (effective from 1 July 2021), have seen a significant transition from a more reactive, response-type focus to a more proactive and preventative focus with a 'General Environmental Duty' that is imposed on all Victorians, businesses and community members.

This revised and updated plan aims to further build on previous management strategies, and to look to the future in order to best minimise the risks posed by onsite wastewater management systems to the environment and all of those that work, live or play within Mitchell Shire.

1.2 What is an 'Onsite Wastewater Management System'?

An Onsite Wastewater Management System is a system that treats 'black water' (toilet waste), 'greywater' (wastewater generated by showers, baths, handwash basins, laundry, or kitchens), or 'sewage' (a combination of black and grey water).

Onsite Wastewater Management Systems are designed to treat and then either recycle or dispose of both greywater and black water in areas that are not able to connect to a reticulated sewerage system. Wastewater can be treated in different ways. Onsite wastewater treatment systems may use bacterial, biological, chemical, or physical treatment of the sewage generated on site.

Although often commonly referred to as 'Septic Tanks', it is important to note that septic tanks are only one type of onsite wastewater management system.

There are a number of different types of 'Onsite Wastewater Management Systems' approved for use by the Environment Protection Authority including:

- Septic Tanks
- Waterless Composting Toilets
- Secondary Wastewater Treatment Systems
- Aerated Wastewater Treatment Systems
- Domestic Greywater treatment systems

Local Councils are responsible for overseeing all systems that are designed to treat daily flows of less than 5000L. Systems larger than this are managed by the Environment Protection Authority directly.

1.3 Potential risks associated with Onsite Wastewater Management Systems

There are several risks associated with onsite wastewater management systems that relate to both public health and environmental health.

Public Health Risk

Untreated (or inadequately treated) wastewater has long been recognised as posing a threat to public health. Wastewater may contain disease causing pathogens, chemicals, and other contaminants from household, industrial or commercial activities.

Wastewater that has been contaminated with human faecal matter may contain a variety of bacteria, viruses, protozoal pathogens, and parasites such as worms. Many of these pathogens cause disease when ingested by humans so prevention of contamination of food and water supplies with sewage or blackwater is critical to preventing disease of both individuals and entire communities.

Contamination can occur directly when untreated wastewater enters storm water drains, rivers, creeks, and dams, or through the contamination of ground water (water located below the surface in aquifers and crevices in rocks and soil). It can also occur if inadequately treated wastewater is used for watering food-producing plants and crops destined for human consumption.

Although all Onsite Wastewater Management Systems have the potential to impact public health if they are not maintained correctly or are failing, those that are located within 'Declared Special Water Supply Catchment Areas' are recognised as presenting a higher level of risk. Failures of systems in these areas could potentially impact not just neighbouring properties, local waterways, and habitat, but also contaminate community water supplies.

Environmental Health Risk

Mitchell Shire contains several areas of environmental significance, for both plant and animal species. The importance of protecting and enhancing the natural environment and Council's role in achieving this is detailed in the Mitchell Shire Environment Strategy 2012 – 2024.

The discharge of untreated or poorly treated wastewater into either surface or ground water has the potential to seriously impact the delicate ecological balance due to increased levels of nitrogen and phosphorus, along with the potential impacts of chemicals (and even pharmaceuticals) that may form part of domestic wastewater.

Aquatic ecosystems can be seriously impacted by the nutrient level changes, chemicals, and other contaminants and this has on-flow effects across a large number of species.

Adverse Impacts to Amenity

Wastewater systems that are not functioning properly can lead to effluent run-off or seepage that may impact community amenity.

Every year, Council's Environmental Health Officers receive complaints of poorly functioning or failing wastewater systems from residents who are concerned about the odours, or the failure to maintain the run-off from an onsite wastewater management system within a property's boundaries.

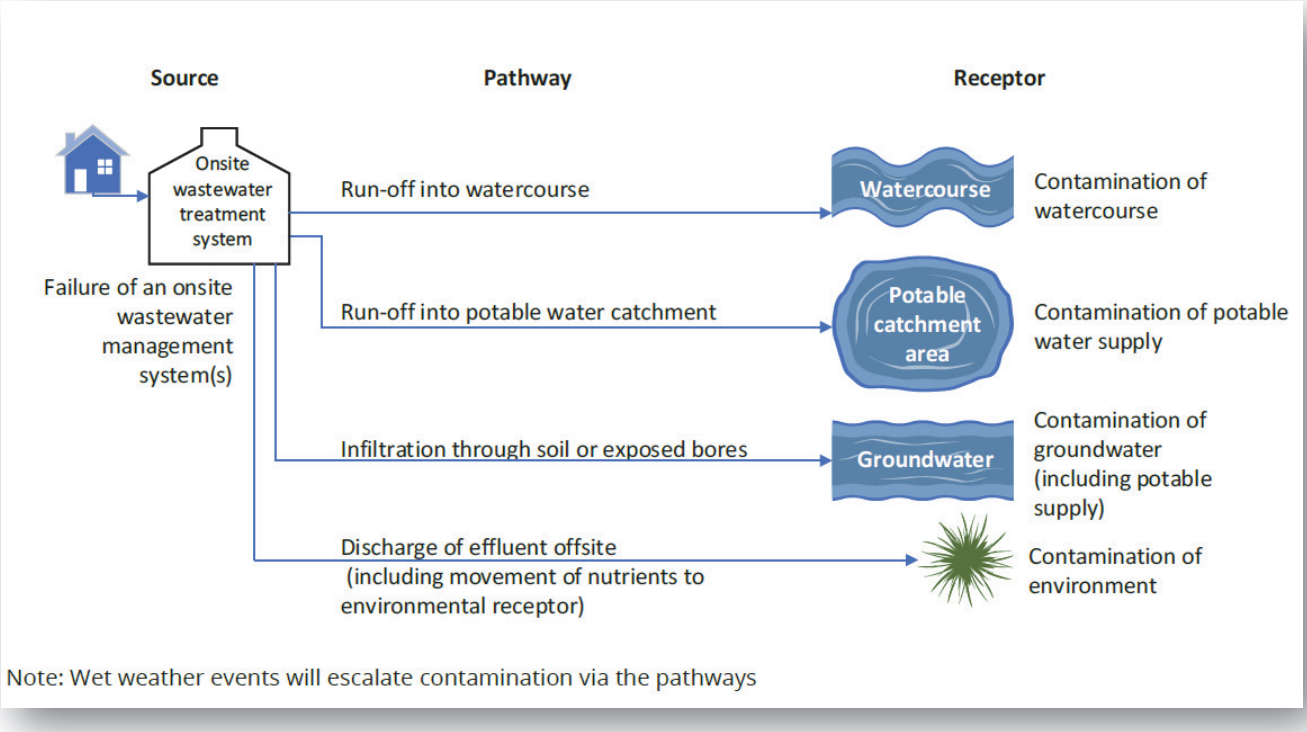


Figure 1 – Contamination Pathways

Taken from the Document 'Onsite Wastewater Management Plans – Risk Assessment Guidance' published by the Department of Energy, Environment and Climate Action

Note: 'Potable' water is water that has been treated and tested as safe for human consumption – it has the same meaning as 'drinking water'. Contamination of the source water used as part of a drinking supply system may mean more treatment is required to make the water safe to drink.

1.4 Legislation relevant to regulating Onsite Wastewater Management Systems

There are a number of different pieces of legislation and associated documents that relate to the regulation and oversight of onsite wastewater management systems in Victoria.

Since the development of Mitchell Shire's last *Domestic Wastewater Management Plan* in 2014, there have been significant changes to the ***Environment Protection Act*** and ***Environment Protection Regulations*** with the goal of introducing a '*new approach to environmental issues, focusing on preventing waste and pollution impacts rather than managing those impacts after they have occurred*.' (Source: EPA Fact Sheet)

The new ***Environment Protection Act 2017***, and ***Environment Protection Regulations 2021***, have seen the introduction of a 'General Environmental Duty' that applies to all Victorians, as well as changes to how enforcement can be undertaken.

The general environmental duty (sometimes shortened to 'GED') is at the center of the *Environment Protection Act 2017* and it applies to all Victorians.

The general environmental duty requires you to reduce the risk of your activities harming the environment or human health. This includes the way you use and maintain your onsite wastewater management system. For example:

- Keep your wastewater or septic system in good working order
- Do not overload the system
- Manage the risk when disposing the treated sewage to the land.

Councils have the power to act when there is a breach of the GED in relation to an onsite wastewater management system.

Read more about council's role.

https://www.epa.vic.gov.au/for-community/environmental-information/water/about-wastewater/onsite-wastewater-regulatory-framework

Source: epa.vic.gov.au

The previous ***Environment Protection Act*** utilised several other related documents such as Codes of Practice, Guidelines, and Toolkits to assist with direction and enforcement.

With the introduction of the new legislation, these supporting documents have, in some cases, moved from 'enforceable' to 'state of knowledge' (such as the the *State Environment Protection Policy (Waters)* and the Code of Practice - Onsite Wastewater Management). Others have required extensive review and updating. This process is still ongoing, posing some difficulties for councils during the transition period.

Under the new legislation, Council 'Authorised Officers' can exercise certain powers of entry and inspection, issue notices ordering maintenance and/or improvement, as well as prohibition notices. The Environment Protection Authority are working on releasing a number of updated publications to assist Local Council and Authorised Officers with administering these new powers and understanding how the regulation of Onsite Wastewater Management Systems has changed under the new Act .

*The **Act** is designed with a different mix of subordinate instruments and regulatory tools to support and work with the Act. This framework focuses on the prevention of waste and the impacts of pollution, rather than managing those impacts after they have occurred.*

Source: water.vic.gov.au

The regulation of Onsite Wastewater Management Systems is complex.

- The *Environment Protection Act 2017* and *Environment Protection Regulations 2021* set out the requirements for owners of any property that has an Onsite Wastewater Management System. They also provide Councils with set powers to regulate these systems, along with a variety of 'tools' they can use to achieve this. These pieces of legislation relate to existing systems.

  Council's Environmental Health Unit (part of Mitchell Shire's Community Amenity Department) plays a lead role in this area.

- The *Planning and Environment Act 1987* is the state-level piece of legislation that provides the framework for planning decisions. It does this by providing the rules and requirements for developing land, including allowed uses for land based on zoning and overlays, and outlines the roles and responsibilities of various authorities and stakeholders.

  The Mitchell Shire Planning Scheme, developed under the Victorian Planning Provisions, outlines the policies and provisions that control land use and development across the municipality.

  Council's Planning Department plays an important role in minimising the potential risks from onsite wastewater by ensuring all developments, subdivisions and re-zoning activities are appropriate, and that planning decisions conform to the requirements of the planning scheme.

  This includes ensuring that the Environmental Health Unit and relevant Water Authorities have their required input into planning decisions through a robust 'referral process'.

  You can learn more about Victoria's planning system by visiting planning.vic.gov.au.

Councils also have specified roles and powers under other pieces of legislation that may impact the installation, use, and regulation of Onsite Wastewater Management Systems:

- *Local Government Act 2020*
- *Catchment and Land Protection Act 1994*
- *Water Act 1989*
- *Safe Drinking Water Act 2003* and *Safe Drinking Water Regulations 2015*

1.5 What is the purpose of developing an Onsite Wastewater Management Plan?

An onsite wastewater management plan is a documented plan that aims to consolidate Council's understanding of the risks associated with onsite wastewater management systems within their municipality, and to prioritise actions and provide direction in relation to how those risks are to be minimised in the medium to longer term.

Although the basic risks associated with the use of onsite wastewater management systems are universal, each municipality will vary in population density and location, soil types, geography, and number and distribution of water catchments. This means that the importance of each of the identified risks and actions and priorities will vary from area to area and be unique for each municipality.

The development and implementation of an Onsite Wastewater Management Plan for Mitchell Shire aligns with the Community Vision and Council Plan which focus on how the Council will deliver its services so that Mitchell becomes *'….a place that people of all ages love to call home. Where we celebrate our natural beauty and where businesses prosper.'*

The Plan documents action items that require budget allocation, human resources, and ongoing advocacy to have a meaningful impact. Without integration into day-to-day council activities, procedures, service contracts, role descriptions, and departmental performance indicators, the planned action items are unlikely to achieve the outcomes required to minimise the risks posed by onsite wastewater management systems to both the community and the environment.

Finally, the development of the Onsite Wastewater Management Plan provides an opportunity to provide information and education for all stakeholders, but especially for those landowners, businesses and occupiers who rely on onsite systems to manage wastewater on their property.

1.6 How we developed this plan

"This Onsite Wastewater Management Plan was developed in close collaboration with internal and external stakeholders, including the Mitchell Shire community. The Mitchell Shire Council Onsite Domestic Wastewater Plan 2024-2029 primarily involved key departments, contractors, and staff responsible for delivering Council services related to onsite wastewater. Their extensive experience and knowledge were instrumental in the plan's development.

During the drafting stages, we also engaged with our largest Water Corporation and relevant government bodies overseeing wastewater management legislation. An initial review of the Mitchell Shire Council Domestic Wastewater Management Plan 2014 was carried out in conjunction with Mitchell Shire Council's Environmental Health unit and Planning team staff. A comprehensive assessment included a desktop analysis of the plan's strategies over the past decade, which highlighted priority areas, data limitations, and the need for updated information management strategies.

Subsequently, a formal risk assessment process was undertaken using the new Risk Assessment Framework for Managing Onsite Wastewater, jointly developed by the EPA, Department of Energy, Environment, and Climate Change, and the Department of Health.

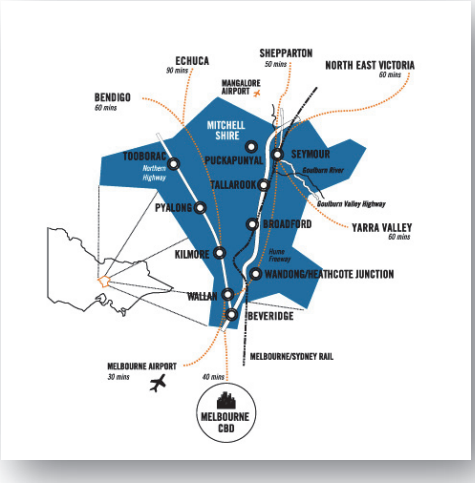
A Draft Plan was formulated and shared for Community Consultation in July-August 2023, with feedback and suggestions collected to inform the final document. We received a total of four written submissions during this period, and we held follow-up meetings with both Goulburn Valley Water and Coliban Water to discuss their submissions in more detail."

2 About Mitchell Shire

2.1 An introduction to Mitchell Shire

Mitchell Shire, located 40 kilometers north of Melbourne, forms part of the Goulburn River Valley Region, known for its scenic beauty. The municipality stretches from the edge of the Melbourne Metropolitan area at its southern boundary to rural plains and granite plateaus surrounding the Puckapunyal Military Area to the north, covering 2864 square kilometers.

Offering a mix of urban and rural living, the municipality supports a diverse range of lifestyle and housing choices. It is also a popular outdoor activity and holiday destination with areas of lush forest, walking trails, rivers and lakes, and a variety of unique attractions.



Located within the Hume Corridor, the Shire contains major road and rail infrastructure connecting Melbourne to Sydney.

Mitchell Shire has a high commuter workforce (more than to 50% of residents work outside of the Shire) relying heavily on regional rail and road networks to travel to and from work and for day-to-day community activities.

Mitchell Shire has been identified by the Department of Transport and Planning as the fastest growing municipality in Victoria with an estimated population growth of 4.5% from 2018 through to 2036. The Shire's current population of 57,109 is projected to more than triple by 2041 to 176,261 residents. Ultimately, the Shire will continue to grow to a potential population of more than 300,000 people. Most of this population growth is expected to be in the metropolitan residential growth corridor, with large housing estates already being developed and changing the landscape in the south of the municipal area.

Our rolling foothills, open farmland, mountain ranges, rivers and creeks contribute to a unique natural environment, however they come with the risk of natural disasters such as fires, storms, and floods. Within this varied natural environment, several endangered and threatened species of flora and fauna have been identified. Protecting and enhancing the natural environment is part of Mitchell Shire Council's vision for the future and details of how we plan to achieve this are outlined in the Mitchell Shire Environment Strategy 2012 – 2024.

Although many parts of the southern urban growth corridor and larger townships within Mitchell Shire are serviced by reticulated sewers, there remains a large area of the Shire where onsite wastewater management is the only option for property owners.

2.2 Onsite Wastewater Systems in Mitchell Shire

The requirement for a property owner to obtain a permit for the installation of an onsite wastewater management system has been in place since at least 1928 (*Victorian Health Act 1928*), however it is only recently that the conditions of these permits has required owners of these systems to regularly service their treatment units and to provide Council with evidence of their ongoing maintenance.

Historically, permits allowed for onsite wastewater management systems to discharge outside of property boundaries, and into open drains. Permits were issued for the installation of systems, with no requirements for ongoing service or maintenance, and with no permit 'end date' despite all the wastewater management options of the day having an expected working lifespan of 25-30 years.

Prior to the formation of the Shire of Mitchell in November 1994, areas included in the current municipality boundaries were overseen by the Shire of Pyalong, Rural City of Seymour, Shire of Broadford, and Shire of McIvor and hence records of onsite wastewater management system permits are spread across the archives of each of these.

Records of the location and type of onsite wastewater management systems located across Mitchell Shire have improved significantly with the transition to electronic record keeping in the last 10-20 years, however, historical data relating to permits issued for onsite wastewater management systems remains incomplete.

In the *Mitchell Shire Council Domestic Wastewater Management Plan 2014,* it was estimated that there may have been 5,000 allotments within Mitchell Shire that relied on onsite wastewater management systems. At that time Council had records of 2275 domestic wastewater permits, however it was acknowledged that records of many units may have been missing from historical data, and there may have been units that had been installed without following the correct application and approval process.

In the years 2014 – 2022, 548 applications were made by landowners and developers for 'Permits to Install' an Onsite Wastewater Management System as areas of the municipality have become increasingly developed.

Mitchell Shire Council's 'Health Manager' program currently lists details of 3149 'known' Onsite Wastewater Management Systems located across the Shire, with some previously unrecorded systems identified during property inspections retrospectively added to the database. There have also been extensions to the reticulated sewerage system in all the larger townships of the municipality as these areas grow and develop.

2.3 Transition to contracted Environmental Health services

In 2017, Mitchell Shire Council made the decision undertake a tender process for the provision of its Environmental Health Services. As a result of this, Kernow Environmental Services have been the contractor delivering all the Shire's Environmental Health activities since this time.

Oversight and regulatory activities relating to Onsite Wastewater Management Systems is only one part of the services provided, and as such, the Environmental Health unit at Mitchell has contractual requirements and key performance indicators across a variety of activities. Many of the outcomes and strategies from the Mitchell Shire Council Domestic Wastewater Plan 2014, were included into the contractual agreement, however some items were outside the scope of the contract or were the responsibility of other areas of council.

At the time of the expiration of the initial contract, Council reassessed its ability to bring these services back 'in-house', however it was found that contracted services remained the better option, and once again the provision of environmental health services for the Shire were put out to tender in 2023. As the successful respondent, Kernow Environmental Services remains as the contractor with a '3 + 3 + 3 contract' in place, and as such, their staff will be responsible for delivering many of the strategies in this plan as part of their 'business as usual' activities.

2.4 Progress, actions, and outcomes from the 2014 Mitchell Shire Council Domestic Wastewater Plan

The *Mitchell Shire Council Domestic Wastewater Plan 2014* contained four areas of strategic priority, with each area broken down into 'Action Steps' with a timeline, responsibility, and budget requirement.

- Priority 1 – Communication and engagement
- Priority 2 – Monitoring, compliance, and information management
- Priority 3 – Review of policy and procedures
- Priority 4 – Reporting and review

Initially, internal Mitchell Shire Council staff implemented the plan, but with the transition to contracted environmental health services, many of the plan action items relating to statutory requirements and 'business as usual' type activities were written into the contract agreement as key deliverables.

Despite the COVID Pandemic presenting new challenges for the delivery of many on-site and face-to-face action items, most of the action steps were delivered, undertaken, or commenced within the timeframes set out.

The Environmental Health unit produced a number of educational resources including a septic system maintenance flyer and fact sheet, and content for the Mitchell Shire Council website. They also conducted a 'Customer Survey' requesting information relating to onsite wastewater management systems from property owners and occupiers across the Shire.

There was development of correspondence templates for use before, during, and after pro-active inspections of onsite wastewater systems in high-risk areas that formed part of the Domestic Wastewater Management Plan's monitoring program.

This monitoring program saw an initial audit of 120 properties perceived to be high-risk in the township areas of Tooborac and Pyalong as part of the 'Place-based Small Town Wastewater Management Project'. This multi-agency project, headed by Goulburn Valley Water, formed the basis of developing an assessment tool for determining the feasibility of a range of options for wastewater management in towns where there is no access to a reticulated sewerage connection.

The goal of developing this assessment tool was to provide all agencies an initial, 'first pass' method of assessing options for small, unsewered townships utilising data such as allotment size, population densities, and information such as soil types captured in Land Capability Assessments.

Since then, a total of over 700 inspections and desktop assessments across 20 localities within Mitchell Shire have taken place. These inspections were separate to the 'business as usual' inspections that took place in response to permit applications (permits to install, permits to alter an existing system, and certificates for use) and those in response to concerns and complaints relating to onsite systems that may have been failing or impacting community amenity.

Onsite wastewater management systems that have been identified during these inspections, monitoring programs, and through the customer survey, but which did not appear in Council records have been added to the database retrospectively.

During the time since the 2014 Plan was implemented, the Environmental Health unit transitioned to a new software program called 'Health Manager'. This improved software allows for better recording and tracking of Onsite Wastewater Management Systems and other environmental health activities across the Shire. Along with the broader Council-wide transition to updated information management software, this has seen a dramatic improvement in information accessibility and sharing.

Since Kernow Environmental Services commenced at Mitchell in 2017, they have also utilised their own Regulatory Information and Management System procedures and forms to ensure compliance with the relevant legislation, codes, and standards of practice. As part of their service agreement, all relevant wastewater documents are reviewed annually or when there is legislative change to ensure that the contained information is accurate, and that processes and activities comply with legislative requirements.

During the time since the implementation of the 2014 plan, there has been the need to undertake enforcement action in relation to landowners who have failed to comply with directions in relation to their onsite wastewater management systems. In most cases, the environmental health unit undertake an educational approach to resolve any issues, but improvement notices have been issued under the *Public Health and Wellbeing Act 2008* where wastewater systems were failing or causing an environmental or public health nuisance.

Much effort has been put into developing a better relationship between the contracted Environmental Health unit and the planning department, including significant work on making sure that 'referrals' for planning applications are processed efficiently, and in a repeatable manner that ensures that all applications are carefully considered and responded to. This has included the development of a number of checklists, a set of standard planning conditions, and a planning referral service agreement between the environmental health and planning units.

The planning department have also been busy undertaking a number of projects that relate to wastewater management within the municipality, including engaging Tomkinson Group to prepare a report – 'Mitchell Shire Small Townships Infrastructure Assessment 2020'. This project looked at the provision of services including water, sewerage, power, gas, and telecommunications for the townships of Waterford Park, Tallarook, Pyalong, Tooborac and Tyaak, and detailed opportunities and constraints for the development of each area.

The infrastructure assessment report helped to inform the larger Mitchell Shire Council Rural Land and Activities Review 2022, which '*outlines a strategic framework and planning policy recommendations for the use, management, and development of rural land within the shire*', with both documents acknowledging the limitations to development and growth where a reticulated sewerage option was not currently available.

Although most of the action items from the 2014 plan have been successfully implemented and delivered, there have been some that have not. With the transition to contracted environmental health services, there have been action items that have been deemed to be outside of the scope of the contract. Where these items have not been identified and re-assigned to a specific role within council, they have remained largely unactioned. This has highlighted the need to ensure that the roles and responsibilities for all future action items are better defined, both within any contract agreement, and internally within council departmental staff.

3 Risk Identification and Assessment for Onsite Wastewater Management in Mitchell Shire

3.1 Risk identification and assessment methodology

The goal of conducting a comprehensive risk assessment is to systematically identify the risks posed by Onsite Wastewater Management Systems across the municipality down to a catchment (or sub-catchment) level. The risk analysis can be used to inform the priorities of the plan moving forward.

In the past, Councils across Victoria conducted their Onsite Wastewater Management risk analyses in different ways. One of the outcomes of the Victorian Auditor General's Office review into 'Managing the Impacts of Domestic Wastewater', was the recommendation that Councils adopt a standardised risk assessment process that aligns with the ISO standards (ISO 31000:2018 – Risk Management Guidelines).

To this end, a risk assessment framework including a Risk Calculation spreadsheet tool, and Risk Assessment Guidance Report for managing onsite wastewater has been developed jointly by the EPA, Department of Energy, Environment and Climate Change and the Department of Health.

Mitchell Shire Council's Onsite Wastewater Management Plan project staff were given the task of populating the risk calculation spreadsheet tool to inform the risk assessment process.

One of the things that became immediately obvious was that, although data collection and management has improved significantly, there are still large gaps in the information required to fully populate the detail required by this spreadsheet tool. There are also areas of data source 'overlap' where inconsistencies in total values exist between data from different origins within the Mitchell Shire records.

With the move to the Health Manager program in 2019, data migration from Mitchell Shire Council's Property and Rating database was undertaken. Unfortunately, the Health Manager program is not currently easily searchable, with only a limited number of data queries and report functions available, most of which relate directly to operational requirements.

Spatial information, searching, and reports relating to known onsite wastewater management systems is, however, available through Mitchell Shire's geographical information system (GIS), 'Weave'. This system contains layers relating to some reticulated sewerage provision (older data), sub-catchments, and onsite wastewater management system permits, but it currently relies on data that is still sourced from the Property and Rating database, rather than from the Health Manager program.

Therefore, populating the risk spreadsheet has presented a significant challenge. Although onsite wastewater management system permit records exist in the Property and Rating database relating to the timeframe since the data migration to Health Manager, there are approximately 100 records less than the totals held within Health Manager.

At best, the information entered into the spreadsheet relating to known systems is a 'close estimate' of the current situation due to being based on this less accurate and less up-to-date data source.

The need for a 'single source of truth' for risk assessment data and reporting is an area that will need to be addressed moving forward. Inclusion of Health Manager data within the searchable Weave program is an option that will need to be explored during the lifecycle of this plan, so that future iterations of risk assessment are able to be based on improved, more easily searchable, and more accurate, data.

The risk assessment spreadsheet tool requires information relating to other risk factors, such as distances and densities of known systems relative to bores, flood plains, and watercourses along with depths from disposal sites to the water table.

Although quite a bit of information about groundwater is available from the 'Visualising Victoria's Groundwater' website, these items are not yet available in Mitchell Shires Geographical Information System as searchable layers, making it virtually impossible to break down the location and type of the known systems based on these criteria.

The risk assessment spreadsheet tool also asks for inputs in relation to soils and slopes, and the distribution of known systems within these. Although state-level soil maps are available, information relating to soil type for individual areas of the municipality are often only available if privately funded Land Capability Assessment reports containing soil type information have been submitted by landowners as part of their permit applications.

Mitchell Shire's Environmental Health Unit staff have begun extracting and recording these details as each permit application is assessed, however the data set is currently limited. To facilitate progression of the risk assessment tool, soil and slope data presented in the 2014 plan had to be used.

This incomplete data set presents a risk that needs to be addressed and is something that Council is likely to battle with for quite some time to come as limited resources make large scale attempts at completing the data unfeasible.

As advised in the Risk Assessment Guidance documentation, '*a high-risk band should be allocated where data is not available (unless local knowledge can support a lower band).*'

3.2 Onsite Wastewater Management Systems in Mitchell Shire

Current records held within the Health Manager program show 3149 registered onsite wastewater management systems are located within the Shire.

Data available within the Weave program totals 3068 records linked to permit applications. Some of these permit applications did not progress or were cancelled, others relate to properties that no longer exist due to subdivision or consolidation of allotments and the allocation of updated property numbers.

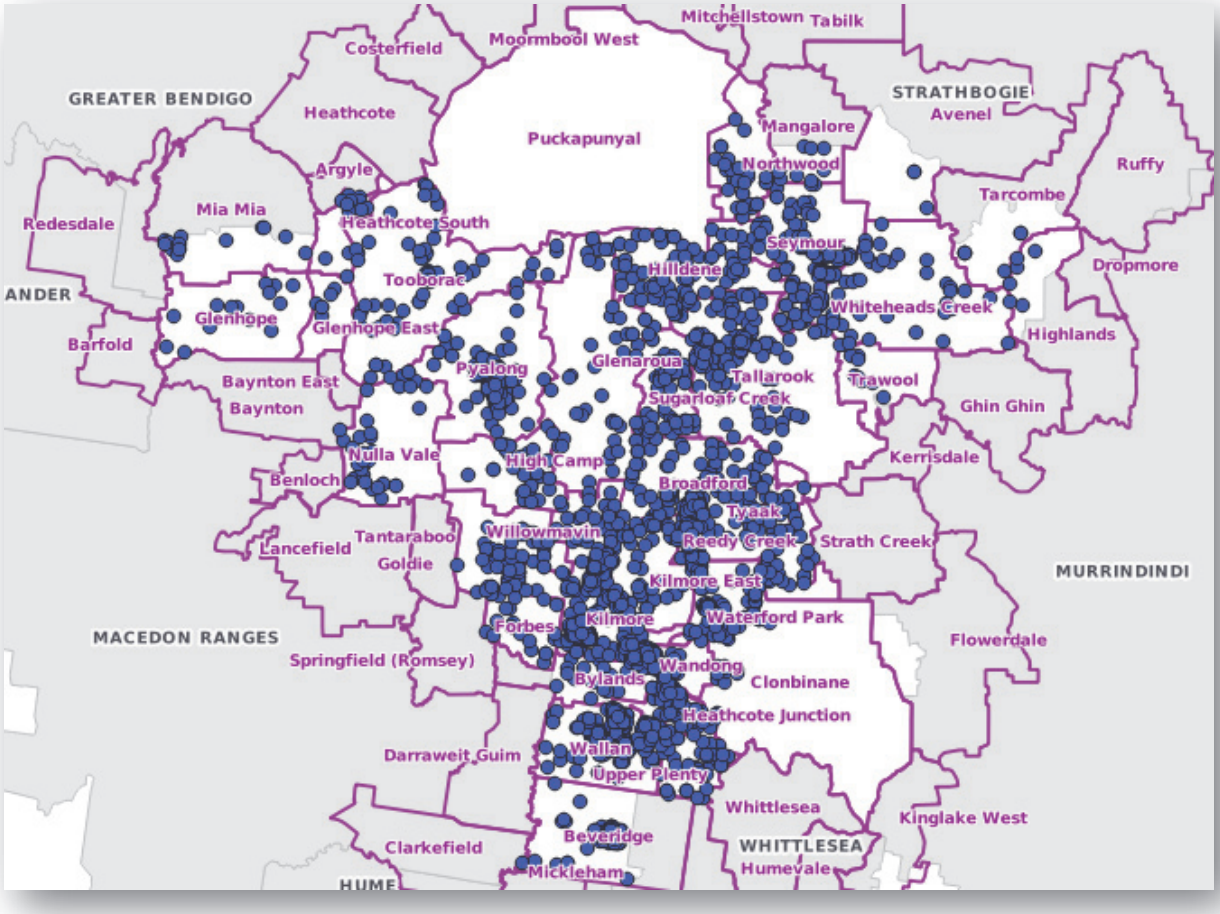


Figure 2 – Distribution of known Onsite Wastewater Management Systems in Mitchell Shire used in the data analysis. Source: Weave (GIS) viewer June 2023 Total systems represented: 3068

The *Mitchell Shire Council Domestic Wastewater Management Plan 2014* undertook modelling to try to better determine how many onsite wastewater management systems might exist within the Shire, looking at unsewered areas where the difference between the Capital Improved Value and the Site Value suggested some type of dwelling on the premises. This modelling, along with registered systems, indicated that there were as many as 5,000 properties that were relying on onsite systems.

Despite the number of onsite wastewater systems recorded in council's records having been improved with the retrospective entry of 'found' systems, there still exists a knowledge gap relating to legacy systems and those installed without correct permissions.

Although attempts need to be made to identify these missing records, it is unlikely that a complete record of every system will ever be achieved. With that in mind, this plan needs to aim to increase the accuracy of information held by council – by retrospectively adding systems as they are found and potentially exploring archived council records – however any risk assessment will need to consider that there will inevitably be 'unknown' and 'unrecorded' systems located across the Shire.

Records of the known systems indicate that there are a variety of system types, with the majority being Primary Treatment Systems, and Secondary Aerated Water Treatment Systems with a smaller number of composting and worm farm type systems. Historically there are also 'split systems' which are no longer permitted to be installed because offsite discharge of wastewater is prohibited.

Onsite Wastewater Management Systems located in the townships of Tooborac and Pyalong, along with areas located to the northwest of these two towns fall into the Declared Special Water Supply Catchment Areas.

Although these areas require special consideration during risk assessment, all planning applications relating to properties within these declared areas are referred to Goulburn Valley Water, Coliban Water, or Melbourne Water in line with the Guidelines that have been developed when applications are made to use or develop these areas.

Onsite Wastewater Management Systems within the high risk Tooborac and Pyalong areas were one of the main focus areas of the *Mitchell Shire Council Domestic Wastewater Plan 2014*, with over 700 inspections of systems in these areas being undertaken since 2017.

Each year, Mitchell Shire Council receives around 70-80 permit applications to either install or alter an onsite wastewater management system. The referral process and the setting of referral conditions for planning applications has been improved thanks to one of the action items set out in the *Mitchell Shire Council Domestic Wastewater Management Plan 2014.*

Staff from the Environmental Health Unit and Planning Departments now have a simplified and documented procedure that promotes consistency across applications and ensures that all legislative requirements are met during the approval process.

3.3 Completion and Outcomes of the Risk Assessment Spreadsheet Tool

Available data was entered into the spreadsheet tool across 19 separate sub-catchment areas ranging from 79 – 499 square kilometers in size.

The number of known systems for each sub-catchment and their type and age was calculated from data extracted from the Weave program. Climatic data was sourced from the Bureau of Meteorology.

Topographical and soil data was consolidated from the analysis undertaken in *the Mitchell Shire Council Domestic Wastewater Plan 2014*, along with information captured from private Land Capability Assessments undertaken as part of planning applications relating to properties within the Shire. The risk attributable to slope across the Shire is low with a median slope of less than 10% for all the sub-catchment areas, so known systems were grouped in the corresponding banding.

Soil types across the Shire do vary, with the higher risk 'sodosols' and 'tenosols' present in the Deep Creek, Hughes/Stewart Creek, and Sugarloaf/Lower Sunday Creek catchment areas. The remaining areas of the Shire are split between the low risk 'chromosols' and 'dermosols' and the medium risk 'kandosols', 'kurosols', and 'vertosols'. The risk assessment spreadsheet tool utilises the six soil categories outlined in Australian/NZ Standard 1547:2012, so known systems were grouped into a single risk category for each sub-catchment.

Distances of known systems from, and densities in relation to bores, flood plains, and watercourses along with depths from disposal sites to the water table was not able to be calculated, so high risk bandings were chosen for all sub catchments apart from those with no known systems.

3.4 Identifying and prioritising the risks associated with Onsite Wastewater Management in Mitchell Shire

Risk identification and prioritization for this plan combines previous risk assessment data (such as that outlined in the *Mitchell Shire Council Domestic Wastewater Management Plan 2014),* Environmental Health unit and Planning Department 'local knowledge', and current data analysis utilising the risk calculation spreadsheet tool and guidelines.

Many of the highest risks identified have not changed since the development of the *Mitchell Shire Council Domestic Wastewater Plan 2014* with ongoing efforts only able to reduce and attenuate the risks posed by onsite wastewater management systems, rather than resolve them completely.

Moving forward, there remains a need to focus limited resources to the areas where the most significant impacts can be made.

Identified Risk – Missing and Incomplete Data

As has already been identified in earlier parts of this section, lack of complete data sets, difficulties in manipulating and searching data, and missing records relating to onsite wastewater management systems remains an ongoing issue, although there have been some significant improvements since the *Mitchell Shire Council Domestic Wastewater Management Plan 2014*.

Despite advances in information technology, newer software programs, and better processes and procedures, there remains the legacy issue of systems that were approved many decades ago, along with systems that were installed without council approvals that have still not been identified and recorded.

Strategies and outcomes for the next five years will need to continue to prioritise and address these issues, working towards a more complete record of active systems across the municipality, including ongoing retrospective recording of legacy and ageing systems that are not currently include in Council records.

Identified Risk – High Risk Townships

Throughout the risk assessments undertaken with each subsequent wastewater management plan, there remains unsewered townships within the Shire that pose a higher level of risk. The 2014 plan identified high-risk townships with significant numbers of properties relying on onsite systems that were located within Declared Special Water Supply areas, and close to water take-off points.

Townships and localities such as Tooborac, Pyalong, Nullavale, Mia Mia, Glenhope and Glenhope East in the Shire's northwest continue to pose a significant threat to water catchments should onsite wastewater systems begin to fail, so they must remain a focus for the duration of this coming plan. The Mitchell Shire Environment Advisory Committee have also flagged the areas of Tallarook and Kilmore East as areas where there may be potential emerging issues.

However, since the implementation of the 2014 plan, the township that has been identified as one of the most significant risk areas for water contamination and public health risk within Mitchell Shire is the township of Waterford Park.

This township is located approximately 14.6 km south of Broadford, within the Clonbinane locality and the Sunday Creek sub-catchment area. The township area, which is home to close to 200 residents, covers around 18 hectares and is bounded to the west by Sunday Creek. Although not located within a Declared Special Water Supply area, its proximity to Sunday Creek and housing density poses a significant risk.

Although this area remains un-sewered, historical planning decisions have allowed subdivision of the area into allotments of around 800-1000m^2. This allotment size is well below the required 4000m^2 for unsewered lots specified within the current Low Density Residential Zone Planning criteria outlined in the planning scheme permit requirements.

As a result of this lot size, it is almost impossible for landowners to meet the requirement for all wastewater to be treated and retained within the boundaries of their lot.

Water sampling undertaken by Mitchell Shire Council's Environmental Health Unit has demonstrated the presence of human faecal matter within the waters of Sunday Creek near the township of Waterford Park.

Further investigation and water sampling is needed to confirm the source(s) of contamination and to support calls for prioritisation of wastewater solutions in this township.

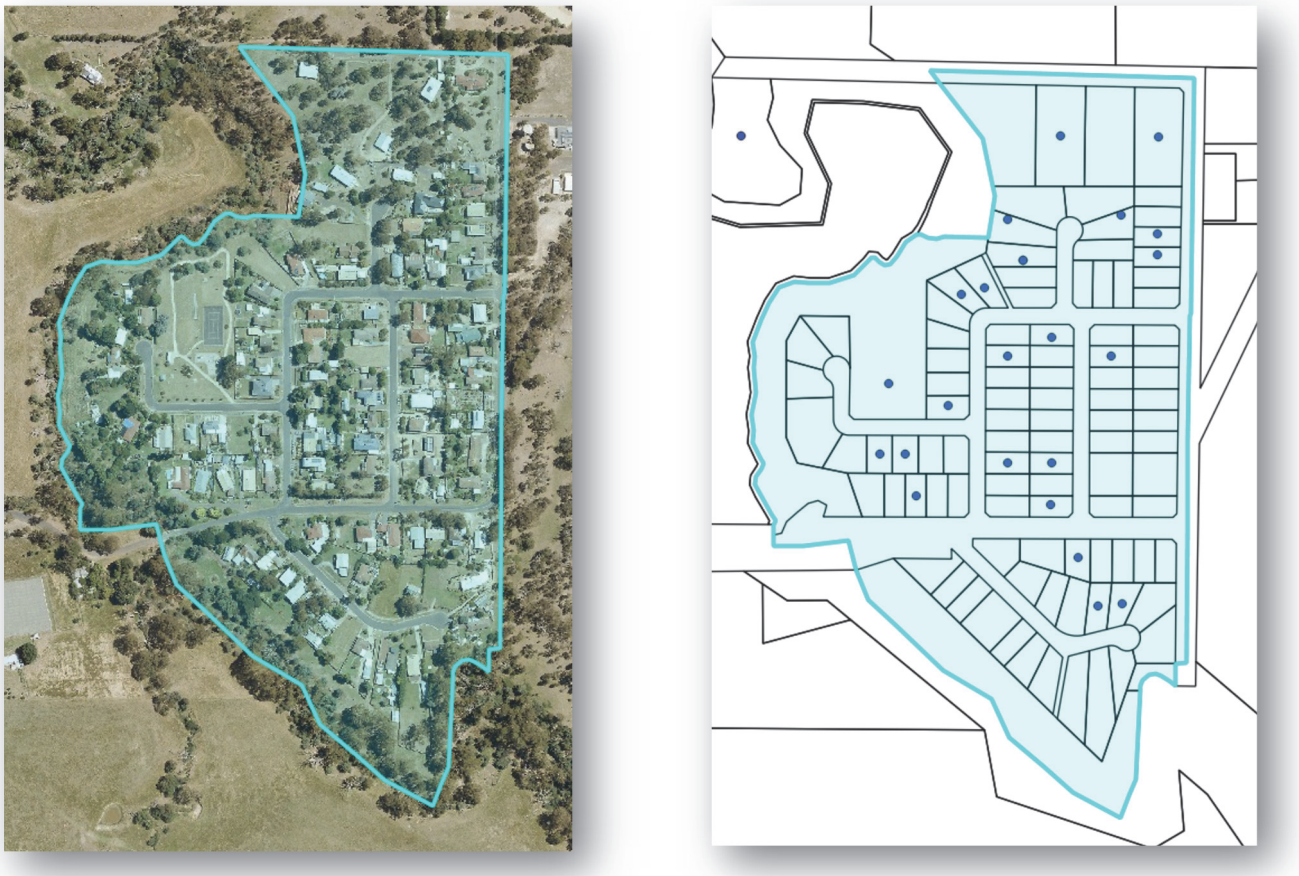


Figure 3 – Aerial map of the Waterford Park locality on the left, and schematic of existing property boundaries shown on the right. Source: Weave search June 2023

- Properties with known Onsite Wastewater Management Systems indicated by blue dots = 23
- Properties with a dwelling but no permit record of an Onsite Wastewater Management System in the Tech One Property and Rating Database Total = 73
- Properties with no current dwelling = 3

Mitchell Shire Council understands that taking a 'compliance-based' approach to this issue is futile. With such limited land with which to work, landowners are unlikely to be able to solve the problem of effectively treating and discharging their wastewater within their allotment boundaries even with a transition to the more efficient onsite wastewater management systems approved for use today. Instead, other solutions need to be found.

Identified Risk – Lack of Understanding and community awareness of Onsite Wastewater Management obligations and risks

An ongoing area of identified risk remains a lack of understanding and awareness of Onsite Wastewater Management and its importance in water quality, the natural environment, and public health.

With increasing development of the municipality there have been significant changes to the population demographic of Mitchell Shire in the last decade. The combination of new landowners who have moved to the area seeking a country lifestyle, others looking for more affordable housing options, and a transition to a more culturally diverse population, the social fabric of the municipality has changed.

This poses a challenge as many landowners are unaware of their obligations in relation to onsite wastewater management and the newly introduced *General Environmental Duty*. Some residents may not be aware that their property relies on an onsite wastewater management system, where it is located, or how the system works.

This lack of awareness can lead to safety issues, as well contribute to system failures due to lack of maintenance, overloading, or lack of early detection of poor functioning. New residents may not be aware of permit conditions, where to access appropriate information relating to their system, or who to contact should issues arise.

For this reason, education and community awareness needs to remain an area of focus for the next five years of this plan, with a focus on transitioning messaging to newer delivery formats, utilising resources developed by other councils, government, and the Environment Protection Authority, as well as leveraging improved management of property data.

4 Strategies

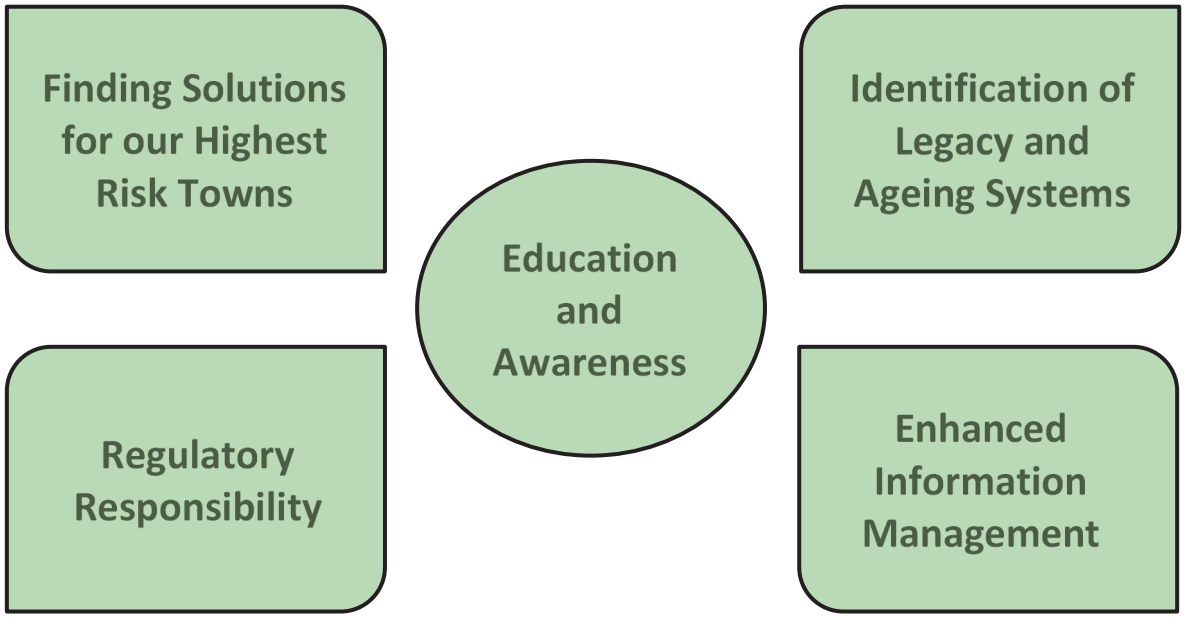
The goal of the *Mitchell Shire Council Onsite Wastewater Management Plan 2024-2029* is to clearly define key objectives and strategies relating to wastewater management that are consistent with the expectations of the Mitchell Shire Community.

The plan also aims to outline set priorities and targets relating to Onsite Wastewater Management over the next 5 years that are both cost effective and deliverable, and to provide a framework and mechanism that acknowledges the interplay between Planning Department and Environmental Health units of Council, the various external stakeholders, and the wider community.

Like every Council, resources are limited, so it is important to prioritise activities to focus on achievable outcomes that maximise the potential impacts of the plan.

4.1 Key Focus Areas for 2024-2029

Based on the risk assessment process, the review of outcomes from the last Mitchell Shire Domestic Wastewater Plan, and Stakeholder input, there are five key focus areas for this plan. These key focus areas acknowledge the priority risks identified across the Shire and aim to build on the work already done to mitigate the potential impacts that Onsite Wastewater Management Systems pose to public health and the environment.



4.2 Focus Area 1 - Finding Solutions for Our Highest Risk Towns

Mitchell Shire Council contains several small, unsewered townships some of which are located within 'Declared Special Water Catchment' areas. Onsite wastewater management within these townships has been the focus of inspection activity and ongoing review since the implementation of the *Mitchell Shire Council Domestic Wastewater Management Plan 2014*.

However, it has been recognised that the ability for landowners and occupiers in some of these areas to comply with the requirements for the safe and effective management of onsite wastewater systems, particularly within the township of Waterford Park, is nearly impossible due to the size of the allotments.

Given that lots are too small to allow for safe discharge within property boundaries, rather than focussing on a futile 'compliance' style approach, Mitchell Shire Council is instead, prioritising efforts to work with these communities and water authorities to find a viable solution moving forward.

4.2.1 – Key Outcomes and Strategies – High Risk Towns

Focus Area 1		Time Frame
Outcome 1	Advocate and partner with Goulburn Valley Water to determine the best 'Town-Based' sewerage options for the township of Waterford Park	Formally write seeking options in 1st quarter 2024
Outcome 2	Ensure that staff within Mitchell Shire's Environmental Health Unit are trained in how to utilise the assessment tool developed by the Place-based Small-Town Wastewater Management Project	2024
Outcome 3	Identify funding opportunities for Onsite Wastewater improvements in High-Risk areas	Ongoing
Outcome 4	Partner with Goulburn Valley Water to engage with the community of Waterford Park in relation to exploring and developing viable solutions for wastewater management	First half of 2024
Outcome 5	Work with Goulburn Valley Water, Coliban Water, and Melbourne Water to determine the most effective methods for council to support information gathering activities aimed at improved prioritisation and delivery of town-based solutions (for example strategic environmental monitoring or working to secure funding for town-level Land Capability Assessments).	Ongoing Commence 2024
Outcome 6	Mitchell Shire's Environmental Health Unit to actively work with the community of Waterford Park to implement shorter-term strategies aimed at ensuring that existing systems are functioning optimally to minimise risk to public health and the environment	2024 & 2025

Outcome 7	Continued State level advocacy for facilitation of town-based sewerage options for high-risk towns through grant programs and increased funding for Water Authorities	Write to relevant authorities and government departments in 1st half 2024 Ongoing
Outcome 8	Continue to work with Water Authorities responsible for other high-risk communities to identify opportunities for sewerage solutions and optimisation of current systems.	Quarterly

4.3 Focus Area 2 - Education and Awareness

Community education and awareness continues to be an area of high focus, especially with the expansion of townships and development within the municipality.

Many new and existing property owners and occupiers may not be aware that their property relies on an onsite wastewater management system, and most will not be aware of their 'General Environmental Duty' responsibilities under the new *Environment Protection Act 2017*.

Education and awareness of the importance of wastewater management needs to be promoted across the entire community, with information readily accessible to all, delivered in a variety of formats, and targeted to those that need it the most.

4.3.1 – Key Outcomes and Strategies – Education and Awareness

Focus Area 2		Time Frame
Outcome 9	Conduct an annual review of all Council resources relating to Onsite Wastewater Management to ensure they remain up-to-date and easily accessible. This includes handouts, fact sheets, website content and templates for correspondence.	Annually
Outcome 10	Conduct targeted education programs to property owners and occupiers in high-risk areas.	Annually

Outcome 11	Conduct regular Shire-wide education campaigns aimed at single 'key' messages relating to Onsite Wastewater Management - such as maintenance of systems, 'septic-safe' household chemicals, minimising overloading, servicing and de-sludging.	Quarterly
Outcome 12	Explore and make use of shared resources relating to Onsite Wastewater Management Systems such as those developed by the Environment Protection Authority and other councils.	Ongoing
Outcome 13	Develop resources promoting safety around Onsite Wastewater Management Systems	2024
Outcome 14	Explore new ways to deliver key messages such as different formats (video, social media platforms) and languages to improve the reach of important messages within the culturally and linguistically diverse communities of Mitchell Shire.	Ongoing
Outcome 15	Develop educational resources for new landowners and occupiers to assist with awareness of whether their property has an onsite wastewater management system and what this means for them.	2024

4.4 Focus Area 3 - Enhanced Information Management

Continual improvement of information capture and information management systems can only improve the monitoring and management of Onsite Wastewater Management Systems across the municipality. Access to data can improve the efficiency and effectiveness of Environmental Health Unit and Planning Department activities, allow for targeted education, monitoring of compliance, and identification of potential problems or high-risk areas.

With increased digitisation of records and transition to newer information management software, Mitchell Shire Council has already seen an improvement in the ability to utilise data relating to wastewater management, however there is significant potential to expand and customise both data capture and reporting abilities.

4.4.1 – Key Outcomes and Strategies – Enhanced Information Management

Focus Area 3		Time Frame
Outcome 16	Explore the option to add Geographical Information System (GIS) mapping layers to assist with identifying properties with access to reticulated sewerage (especially as this expands into new areas) and those known to have Onsite Wastewater Management Systems.	2024

Outcome 17	Ensure that Onsite Wastewater Management data, processes and protocols continue to be integrated in new and upgraded Council Information management systems (CRM, Trim, Health Manager, GIS) to ensure ease of regulatory management.	Ongoing
Outcome 18	Work with Council's Environmental Health contractor to expand the data fields available within the Health Manager program to: 1. Better assist with searches and day-to-day Environmental Health Team operations relating to properties with Onsite Wastewater Systems 2. Improve data capture relating to Onsite Wastewater Systems, such as recording of Land Capability Assessment outcomes, additional information relating to applications to install or alter, and ongoing permit conditions 3. To facilitate improved accuracy of reporting with relation to Onsite Wastewater Management Systems across the municipality 4. To better inform risk management assessments relating to Onsite Wastewater Management Systems	2024-2025
Outcome 19	Develop a search function within the Property and Rating Database that identifies the transfer of ownership of properties with an Onsite Wastewater Management System so that new owners can be provided with key information relating to the management and responsibilities associated with these systems within the first few months of moving.	2025
Outcome 20	Work with the Environment Protection Authority and Water Authorities to develop a unified approach to ensure that those properties that have access to reticulated sewerage are aware and are encouraged to connect.	Ongoing
Outcome 21	Ensure that internal processes relating to Onsite Wastewater Management System permit applications, especially those relating to upgrading or replacing systems, include checking against current sewer availability	2024

4.5 Focus Area 4 - Identification of Legacy and Ageing Systems

Identification of legacy and ageing systems is a problem common to all Councils. Historically, the level of regulation of onsite wastewater management systems was not as stringent, records may have been lost over time, and there may have been systems installed without council knowledge.

Even those systems that were granted council permits many decades ago may now pose a risk due to lack of maintenance, use of discharge methods that were once approved, but are now considered unacceptable, and reaching or exceeding their expected working lifespan.

Mitchell Shire Council's records include systems that date back to installation in the 1950's, however most of the recorded systems date from the 1980's and 1990's to the current day.

4.5.1 – Key Outcomes and Strategies – Identification of Legacy and Ageing Systems

Focus Area 4		Time Frame
Outcome 22	Explore the funding options for a short-term Environmental Health position to review archived records of Onsite Wastewater Management System permit applications and to retrospectively add their details to the Health Manager Program	2027
Outcome 23	Retrospectively add details of Onsite Wastewater Management Systems that are identified by the Environmental Health team during routine property inspections	Ongoing
Outcome 24	Conduct community-wide surveys of landowners and occupiers in high-risk areas aimed at identifying Onsite Wastewater Management Systems and their type and age.	2028
Outcome 25	Develop a suite of resources for those landowners and occupiers faced with an ageing or failing system to assist them with identifying their options for repair, replacement, or upgrading, along with information about their responsibilities under current legislation.	2024 - 2025

4.6 Focus Area 5 - Regulatory Responsibility

With the transition to a contracted Environmental Health provider in 2017, Mitchell Shire has set benchmarks and expectations in relation to the regulatory responsibility of Onsite Wastewater Management across the Shire.

Following the endorsement of the *Mitchell Shire Council Domestic Wastewater Management Plan 2014,* the contract agreement focused on providing all the referral advice for permit applications, inspections, response to complaints, and administrative recording of Onsite Wastewater Management Systems. There was also a pro-active inspection requirement for high-risk areas, aiming to identify ageing and failing systems and to provide education directly to residents in these areas.

Moving forward, it is recognised that repeated inspections of compliant properties is unlikely to have a significant impact, and that resources may be better utilised in other ways. The Kernow contract agreement has recently been reviewed and updated to reflect this, focusing on inspections where the risks are highest or where compliance issues have been identified.

4.6.1 – Key Outcomes and Strategies – Regulatory Responsibility

Focus Area 5		Time Frame
Outcome 26	Review all internal regulatory procedures and documents relating to Onsite Wastewater Management Systems to ensure that they reflect the current legislative requirements and to ensure a robust wastewater compliance process that includes procedures for managing non-compliance	Annually
Outcome 27	As new Guidelines and Toolkits are released to support the new *Environment Protection Act 2017* and *Environment Protection Regulations 2020*, ensure their information and processes are incorporated into existing daily activities, internal procedures, and documents	As required
Outcome 28	Provide ongoing training and up-skilling opportunities for Environmental Health Unit and Planning Department Staff	Ongoing
Outcome 29	Continue to consolidate the relationship between Environmental Health Unit Staff and Planning Department Staff to ensure optimal synergy through shared understanding of responsibilities and review of referral procedure documents	Ongoing
Outcome 30	Continue to develop and foster working relationships between Mitchell Shire Council and key stakeholders such as Water	Ongoing

	Authorities and the Environmental Protection Authority including initiation of regular meetings with relevant staff	
Outcome 31	Continue to monitor and update development and strategic planning policies in unsewered areas and townships to ensure that housing density, and allotment size continue to be sustainable.	Ongoing

4.7 Estimated Costs of Implementing this Plan

It is estimated that the costs of implementing the strategies of this plan will cost an average of $5000 to $6000 each year for the duration of the plan.

In some years, the main costs incurred will relate to education campaigns, community awareness activities, and internal staff costs associated with promoting and publishing the information associated with these programs. In other years there will be costs associated with additional short-term contract staff or service providers to support and achieve the goals associated with specific tasks not able to be undertaken by existing staff.

Many of the activities outlined within the strategies in this plan form part of the continual improvement and expansion of 'business as usual' activities already undertaken by Council and contracted staff. As such, some of the costs of delivering these actions will be absorbed into existing staffing and contractor budgets.

The Environmental Health service provided under contract by Kernow Environmental Health has the facility for areas of focus to be nominated by Mitchell Shire Council in consultation with the contractor and has the facility for amendments to be made if more significant changes are required. With the more significant contract amendments, an additional cost may be incurred.

Advocacy and exploration of state and federal level grants and programs that may assist with decreasing the risks associated with onsite wastewater management systems will need to be ongoing. Grant and incentive programs may enable landowners and occupiers to update and replace their ageing systems, especially in the areas that are posing the greatest risks.

Mitchell Shire Council's advocacy team are continually active, lobbying at all levels for better access to available services and programs for the wider Mitchell Shire Community.

5 Reporting and Review

5.1 Plan review

5.1.1 Annual Review of Progress and Priorities

This plan will be reviewed annually by the Manager–Community Amenity to assess progress towards the objectives outlined in the plan and to ensure that it continues to reflect the priorities, processes and procedures of Mitchell Shire Council as well as meeting current legislation requirements and public health directives.

Reporting and Review		Time Frame
Outcome 32	Undertake annual review of progress towards objectives & provide Council with a summary of progress.	Annually
Outcome 33	Review the delivery of externally contracted Environmental Health Services related to plan objectives, and if required, negotiate updated contract key performance indicators.	Annually
Outcome 34	Publish a report of the progress towards the implementation of the *Mitchell Shire Council Onsite Wastewater Management Plan 2024-2029* on Council's Website.	2027 (Required every 3 yrs)

5.1.2 Development of Mitchell Shire Council's Onsite Wastewater Management Plan 2030-2035

The plan will be reviewed and updated, and the risks reassessed in five years as required by current legislation.

Appendix 1 – Water Corporations in Mitchell Shire

In Victoria there are three layers of water management, each with a different role. There are the urban and rural water corporations that are responsible for supplying water to properties for different uses. The urban water corporations are also responsible for sewerage services and wastewater treatment. The third type of water management – the Catchment Management Authorities – are responsible for managing the catchments – the rivers, creeks, and waterways.

Rural Water Corporations are responsible for providing rural water supplies such as water for irrigation and stock purposes, water for environmental and recreational purposes, and raw water that the urban water corporations may treat so that it can be used for drinking – called potable water.

The Rural Water Corporation responsible for Mitchell Shire is Goulburn-Murray Water.

Urban water corporations are responsible for providing reticulated water and sewerage/wastewater services to both urban and rural customers across the state of Victoria. They also manage water storage facilities, wastewater treatment facilities, and are responsible for the planning of any expansions to the reticulated water and sewerage systems.

Water and sewerage services across Mitchell Shire are largely provided by Goulburn Valley Water.

Yarra Valley Water provides water and reticulated sewerage in the southern fringe of the Shire, notably to the townships of Wallan and Beveridge.

Coliban Water provides potable water (but no sewerage) to the township of Tooborac in the Shire's Northwest.

Goulburn-Murray water, Goulburn Valley Water and Coliban Water are the legislated 'referral authorities' who assess and respond to planning applications relating to Onsite Domestic Wastewater Systems when they fall within the 'Declared Special Water Catchment areas'. (these areas are listed within Schedule 5 of the *Catchment and Land Protection Act 1994*)

Catchment Management Authorities are responsible for management of the natural waterways and floodplains within the catchment. Their responsibilities are outlined in the *Catchment and Land Protection Act 1994*.

Mitchell Shire has areas that fall within the authorities of:

Goulburn Broken Catchment Management Authority

North Central Catchment Management Authority

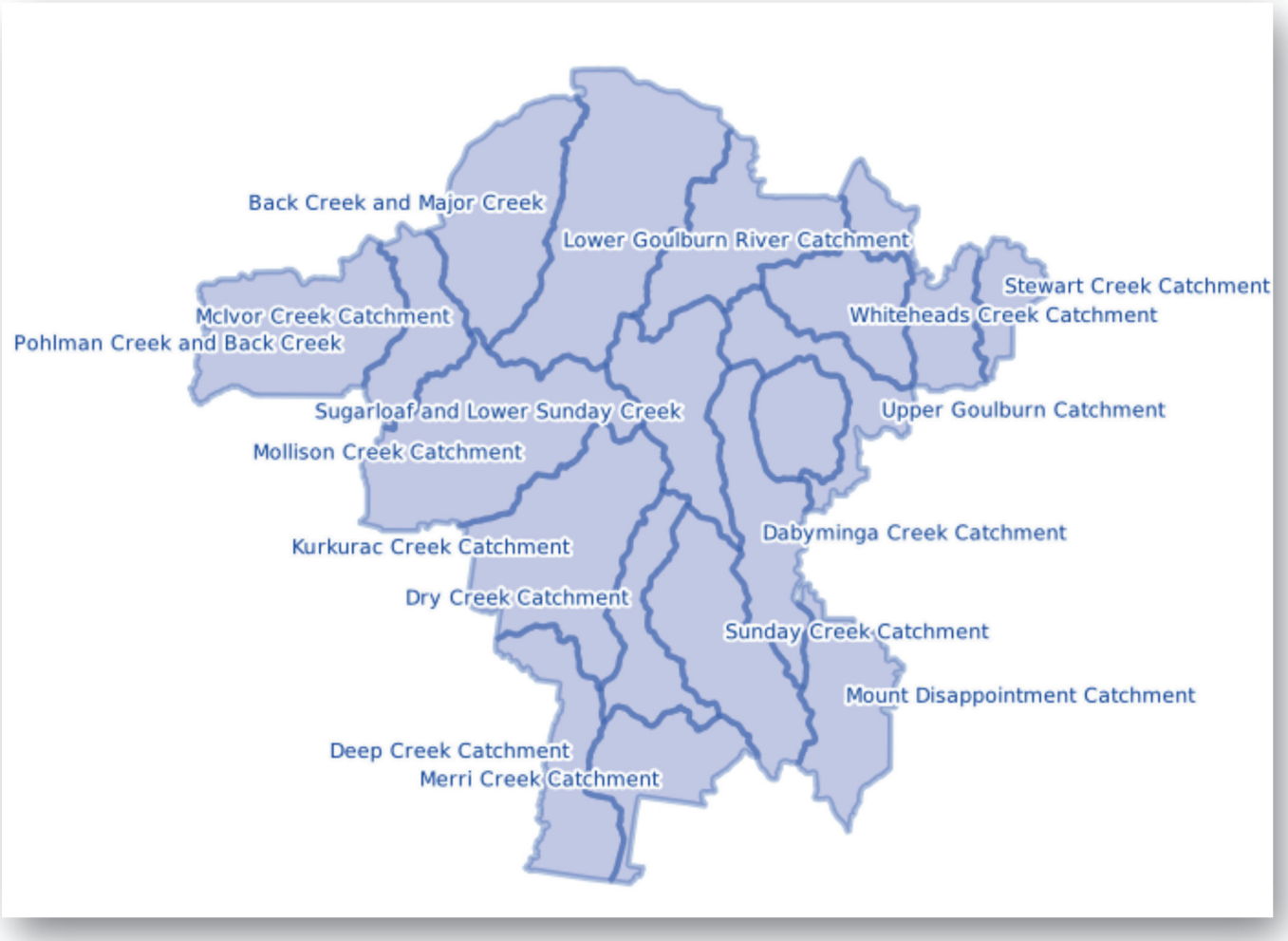
Melbourne Water (previously Port Phillp and Westernport Catchment Management Authority)

You can learn more about the role of each of these bodies by visiting water.vic.gov.au. You can also utilise the search function to find out which of these Authorities and Corporations are responsible for water services at a particular address.

Appendix 2 – Sub Catchments within Mitchell Shire

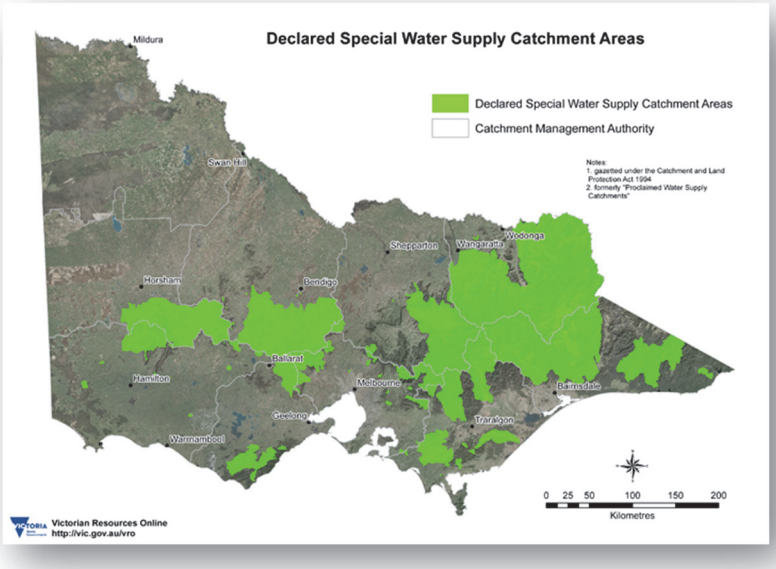
Map of the 19 sub catchment areas in Mitchell Shire taken from the Geographical Information System.

All known wastewater system data was plotted against these areas for the risk calculation spreadsheet analysis.



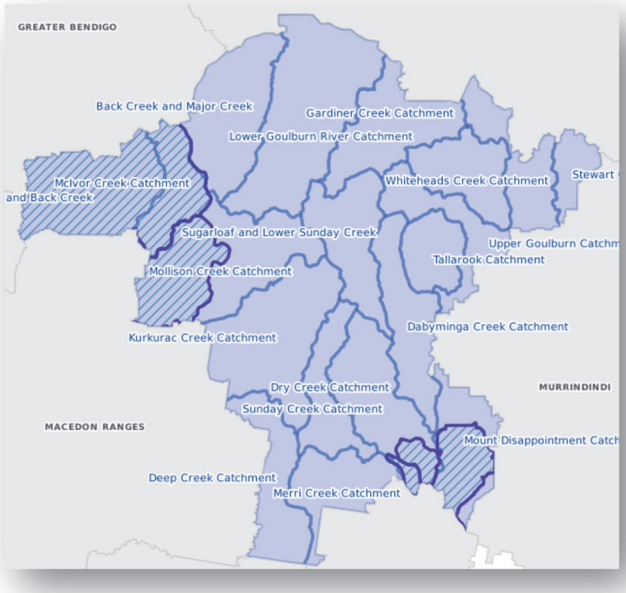
Appendix 3 – Declared Special Water Catchment Areas within Mitchell Shire

There are 134 Declared Special Water Supply Catchment Areas (formerly known as Proclaimed Water Supply Catchments) within Victoria.



Source: https://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/dwsc_vic

Within Mitchell Shire, all of the McIvor Creek and Pohlman Creek and Back Creek sub catchments along with parts of the Mollison Creek, Sunday Creek and Mt Disappointment sub catchments are located

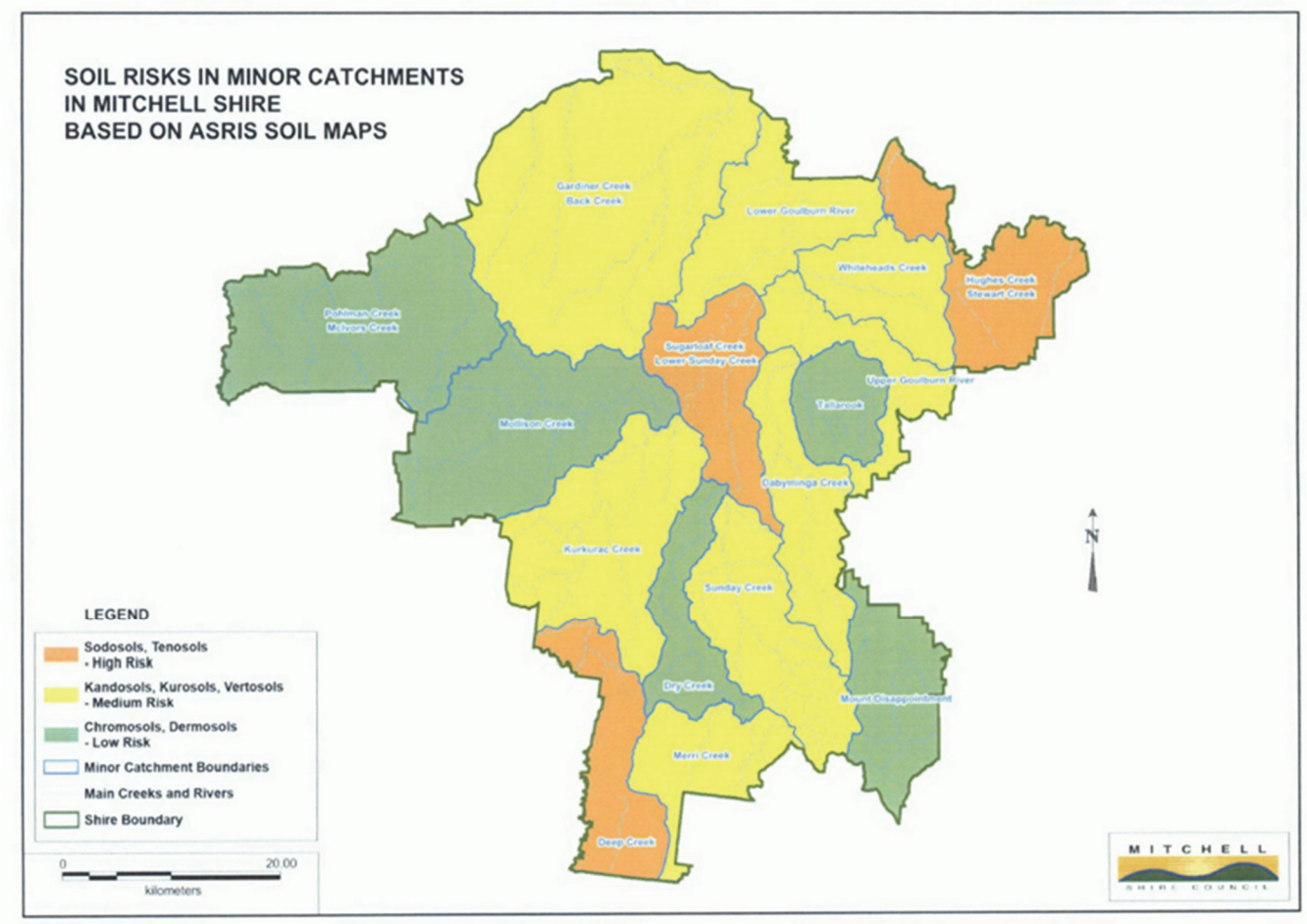


Hatched areas indicate Declared Special Water Catchment Areas

within these areas. Localities include, Tooborac, Pyalong, NullaVale, Glenhope, Glenhope East, MiaMia, Heathcote South and Clonbinane.

Appendix 4 – Soil Risk Categories within Mitchell Shire

This map of soil risk has been taken directly from the *Mitchell Shire Council Domestic Wastewater Plan 2014.*



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