2025-2029 Hepburn Shire Council Onsite Wastewater Management Plan

Acknowledgement of Country

Hepburn Shire Council acknowledges the Dja Dja Wurrung as the Traditional Owners of the lands and waters on which we live and work. On these lands, Djaara has performed age-old ceremonies of celebration, initiation and renewal. We recognise their resilience through dispossession, and it is a testament to their continuing culture and tradition, which is strong and thriving. We also acknowledge the neighbouring Traditional Owners, the Wurundjeri to our Southeast and the Wadawurrung to our Southwest and pay our respect to all Aboriginal peoples, their culture, and lore. We acknowledge their living culture and the unique role they play in the life of this region.

1. Authorisation

This Onsite Wastewater Management Plan (OWMP) sets out how Hepburn Shire Council ensures the effective and sustainable management of domestic wastewater, specifically addressing risk to human health and the environment from onsite wastewater systems, in line with our responsibilities under the Environment Protection Act 2017 and General Environment Duty (GED).

Approved

Ron Torres
Director Development and Community
Date: 29 April 2025

Endorsed

Bradley Thomas
Chief Executive Officer
Date: 29 April 2025

Contents

2. Version History

1	24 August 2024	Final Draft
2.	27 March 2024	1.0

3. Document Control

This Hepburn Shire Council Onsite Wastewater Management Plan (OWMP) is a controlled document that may not be altered except by amendments endorsed by the Director of Development and Community. It is intended to be a 'live' document, and all suggested amendments or additions should be forwarded to the Manager of Community Safety.

4. Definitions

Name	Definition
Authorised officer	Environmental Health Officer, Environmental Health Technical Officer or plumber engaged and authorised by the Council.
Blackwater	Wastewater from toilets.
Environmental Significance Overlay	To identify areas where land development may be affected by environmental constraints and to ensure that development is compatible with identified environmental values.
Onsite Wastewater Management System	The Environment Protection Regulations 2021 define an onsite wastewater treatment plant as a system with a design or actual flow rate of sewage not exceeding 5,000 litres on any day. This includes all beds, sewers, drains, pipes, fittings, appliances, and land used in connection with the treatment plant.
Onsite Wastewater Management Plant	A treatment plant for the bacterial, biological, chemical or physical treatment of sewage generated onsite. Examples include septic tank system, wet or dry composting toilet, aerobic treatment and sand filter.
Enforcement	In this OWMP, enforcement is broadly defined to include informal education and advice to duty holders as well as formal legal directions or orders to compel compliance.
Failed OWMS with off-site discharge	Components of the OWMS are no longer functioning, so untreated effluent is discharging beyond the property boundaries.
Greywater or sullage	Domestic wastewater from bathrooms, kitchens, and laundries.
Land Capability Assessment (LCA)	The assessment of the land's capability to support a particular use, such as effluent disposal.
Onsite wastewater management system (OWMS)	Means an OWMS with a design or actual flow rate of sewage not exceeding 5000 litres on any day and includes all beds, sewers, drains, pipes, fittings, appliances, and land used in connection with the treatment plant.

Primary treatment	The separation of suspended material from wastewater by settlement and/or flotation in septic tanks, primary settling chambers or other structures. In addition to physical separation of solids from liquid, liquid and solids may be decomposed by aerobic or anaerobic microbiological processes and digestion.
Treated effluent with onsite discharge	The OWMS is satisfactorily treating the waste, but the distribution of the treated effluent is not functioning satisfactorily and is discharging within the property boundary.
Treated effluent with off-site discharge	The OWMS is satisfactorily treating the waste, but the distribution of the treated effluent is not functioning satisfactorily and is discharging beyond the property boundaries.
Secondary treatment	Microbiological digestion, physical settling, filtering processes and decomposition of wastewater constituents following primary treatment
Sewage	Wastewater containing any of human excreta, urine and toilet flush water and includes greywater (which is also called sullage and may consist of water from the shower, bath, basins, washing machine, laundry trough and kitchen)
Special Water Supply Catchment	An area where the natural landscape collects water, and all rain and surface water eventually flow to a creek, river, lake, ocean or groundwater system.
Stormwater	Rain that flows over ground surfaces as runoff and appears in surface streams and creeks.
Wastewater	Waste consists of water and includes any of the following: sewage or other human-derived wastewater, wash down water or cooling water, irrigation runoff or contaminated stormwater, contaminated groundwater, water containing any commercial, industrial and trade waste (Environment Protection Regulation 2021).

Table 1 Definitions

5. Introduction

Hepburn Shire is renowned for charming towns, mineral springs, and natural beauty, and Hepburn Shire Council (Council) is committed to protecting the health of the community, environment, and waterways. In meeting this commitment, the Council has a number of critical legislative responsibilities, one of which is regulating on-site wastewater management systems (OWMS).

When designed and operated correctly, an OWMS is a safe and sustainable method of wastewater disposal. Council plays a vital role in ensuring that people responsible for installing and operating an OWMS within the Shire comply with the laws. The Council is committed to accountable and sustainable onsite wastewater management practices.

Council has developed this Onsite Wastewater Management Plan (OWMP) to:

- Establish a framework for consistent, risk-based decision-making in the regulation of OWMS within the Shire.
- Support water authorities in determining whether to relax the 1:40 hectare dwelling density rule. Without the OWMP, the 1:40 hectare rule generally applies, potentially limiting development.
- Providing a platform to build community awareness of the risks associated with onsite wastewater and understanding their obligations under the newly introduced General Environmental Duty (GED)
- Outline strategies and actions for the Council to achieve during the lifecycle of this plan.
- Providing relevant wastewater context through the locality risk assessment.

"The mineral springs that occur within the Hepburn Shire have natural, cultural and economic significance. The protection of the springs, their aquifers and their environs from the impacts of waste disposal and drainage is a fundamental component of the future management of this asset." - Statement of environmental significance from the Hepburn Shire Council ESO

6. Purpose and Objectives

The purpose of this OWMP is to:

- provide an opportunity to engage with the community, and stakeholders regarding wastewater management priorities
- review, update and document the actions to manage risks from onsite wastewater systems
- incorporate recent legislative changes, including the Environment Protection Act 2017, and Regulations 2021

Our onsite wastewater strategies for the period between 2025 and 2029 include:

Strategy 1 *As we progress through this plan's lifecycle, we will foster ongoing and productive collaboration with all stakeholders.*

Strategy 2 *Public health and environmental protection are at the centre of wastewater decisions.*

Strategy 3 *Our authorised officers will have the skills and knowledge to make decisions fairly, consistently and proportionate to risk.*

To achieve these strategies, the Council has developed specific actions to be completed over the course of this plan. These actions are referenced throughout this plan and listed in Appendix 1.

7. Scope

Councils' OWMP applies OWMS that process less than 5,000 Litres of wastewater on any given day. The OWMP considers and applies the following acts, regulations, and Council plans and strategies:

Legislation

- *Building Act 1993 and Regulations 2018*
- *Catchment and Land Protection Act 1994*
- *Environment Protection Act 2017 and Regulations 2021*
- *Infringements Act 2006 and Regulations 2015*
- *Local Government Act 2020*
- *Planning and Environment Act 1987*
- *Public Health and Wellbeing Act 2008 and Regulations 2019*
- *Safe Drinking Water Act 2003 and Regulations 2015*
- *Subdivisions Act 1988*
- *Water Act 2020*

Council Plans and Strategies

- Hepburn Shire Council Planning Scheme
- Hepburn Shire Council, Council Plan 2021 – 2025
- Future Hepburn: Structure Plans

8. Legislative Context

8.1 Environment Protection Act 0217 and Environment Protection Regulations 2021

The *Environment Protection Act 2017* and *Environment Protection Regulations 2021* are the primary legislation used by local government to regulate OWMS by way of permit upon installing, altering, or using an OWMS, and provide enforcement powers to manage risks associated with non-compliance.

Section 156 of the Environment Act has introduced the Order for Obligations of Manager or Land or Infrastructure (OMLI) as a new legislative instrument. The OMLI sets out requirements for councils regarding strategic management of urban stormwater and on-site wastewater and for water

corporations regarding responding to councils' on-site wastewater management plans. It replaces the clauses covering these items in the former State Environment Protection Policy (SEPP), which were saved in the Environment Protection Transitional Regulations 2021.

8.1.1 Councils' Implementation of the New Legislative Framework

This OWMP allows the Council to apply the new OWMP as intended. This legislation underpins the regulatory framework that the Council, owners, and occupiers must comply with.

To assist all Victorian Councils, the EPA has published the following guidelines, which have been considered and applied where appropriate in the OWMP and relevant procedures that support it.

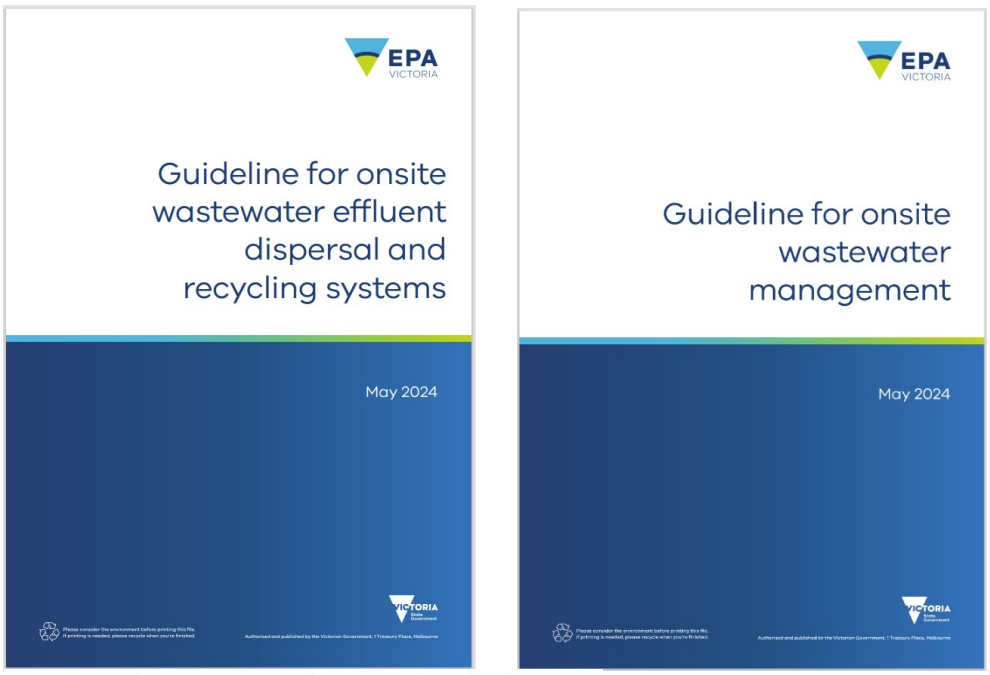


Image 1- Environment Protection Authority guidelines

8.1.2 New Obligations for all Victorians

The Environment Act has introduced the General Environmental Duty (GED), which changed how the Environment Protection Authority (EPA) regulates pollution, waste, and contamination in Victoria. The GED focuses on preventing harm from waste and pollution rather than managing impacts after damage has already occurred. For OWMS, the GED requires owners to reduce risks from their OWMS. The GED is at the centre of the Act, applies to all Victorians, and requires the community to reduce the risk of their activities harming the environment or human health.

Under the Act, a contravention exists if there is a failure to do any of the following, so far as reasonably practicable:

- use and maintain plant, equipment, processes, and systems in a manner that minimises risks from pollution and waste

- use and maintain risk management systems
- handle, store, use or transport substances in a manner that minimises risk
- provide training and information to persons

"The General Environmental Duty is intended to be enduring, flexible and fill the regulatory gaps." Environment Protection Authority (EPA) Victoria 2021

8.2 Public Health & Wellbeing Act 2008

The Public Health and Wellbeing Act enables authorised officers to investigate and remedy nuisances. Council must investigate all complaints relating to nuisance or the illegal management of OWMS and take action to abate the nuisance where necessary.

8.3 Local Government Act 2020

The Local Government Act outlines the provisions under which Council operates and empowers Councils to have local laws and regulations for OWMS.

8.4 Building Act 1993

Licensed Plumbers must submit a compliance certificate upon completing an OWMS installation before an Occupancy Permit can be issued for a new dwelling.

8.5 Planning and Environment Act 1987

The *Planning and Environment Act 1987* sets out the planning provisions, planning schemes, procedures for obtaining permits and enforcing compliance with planning schemes. Planning schemes set out how land may be used and developed.

An important reference in the development of the OWMP is the ***Minister's Guidelines for Planning Permit Applications in Special Water Supply Catchment Areas. These guidelines promote a range of requirements that protect the environment, human health, and amenities***.

Importantly, this guideline highlights when Councils' OWMP may form an acceptable basis for relaxation of Policy 1 – Density of dwellings and other activities requiring onsite wastewater disposal, and they include:

1. The OWMP satisfies the relevant requirements of the OMLI.

2. The Council should be actively implementing the OWMP and be able to provide evidence of this implementation.

3. When implementing the OWMP, the approach to compliance and enforcement should be reflected in developing an action plan and consistent with the priorities identified in the risk assessment.

The Hepburn Shire Council Planning Scheme has been considered for developing this OWMP, focusing on areas identified for current or potential residential development. Without a reticulated sewage connection, a land capability assessment proving that the land can treat and retain wastewater within the allotment boundaries requires the council to consider a planning permit application for development, including subdivision.

Image 2 Department of Energy Environment and Climate Action guideline

9. Hepburn Shire Context

Hepburn Shire is located within the Central Highlands region of Victoria and covers an area of 1,473 square kilometres. The estimated residential population is 16,604. The Shire is predominantly rural, with many townships, villages, and rural-residential regions. Daylesford, Hepburn Springs, Creswick, Clunes, and Trentham are the central townships.

Rural land is mainly used for agriculture (particularly sheep and cattle grazing and potato and crop growing) and forestry, with some viticulture. Tourism is an important industry, with the Shire containing 80% of Australia's mineral spring reserves. These reserves are essential geological and hydrological features and a significant drawcard for thousands of visitors to the region.

Hepburn Shire is in the upper catchment for the Tullaroop, Eppalock, Cairn Curran, Loddon River, Creswick, Lake Merrimu, and McCallum Creek water catchments. Water from these catchments supplies drinking and irrigation water for central and northern Victoria. As the Shire is located within Special Water Catchment areas, there are tight controls on land development.

Land use requiring OWMS disposal has the potential to generate cumulative impacts on water quality within special water supply catchment areas. This has resulted in the Hepburn Planning Scheme including the Environmental Significance Overlay (ESO), which triggers the requirement to obtain a planning permit and submit a Land Capability Assessment for a number of developments that may pose a risk to water quality.

A Special Water Supply Catchment is an area where water is collected by the natural landscape and all rain and surface water eventually flow to a creek, river, lake or ground water system.

9.1 Future Hepburn

At the time of this OWMP's publication, significant public consultation was underway for the Hepburn Shire Township Structure Plans. These plans protect and enhance the existing township character and guide appropriate growth and development.

These plans are essential, as they will guide potential growth and development, which may have implications for onsite wastewater density, a risk factor identified in the OWMP.

Also, these plans may explore appetite or interest for extensions of the reticulated sewer network.

All stakeholders must be aware of these plans, which are available on the Council's website.

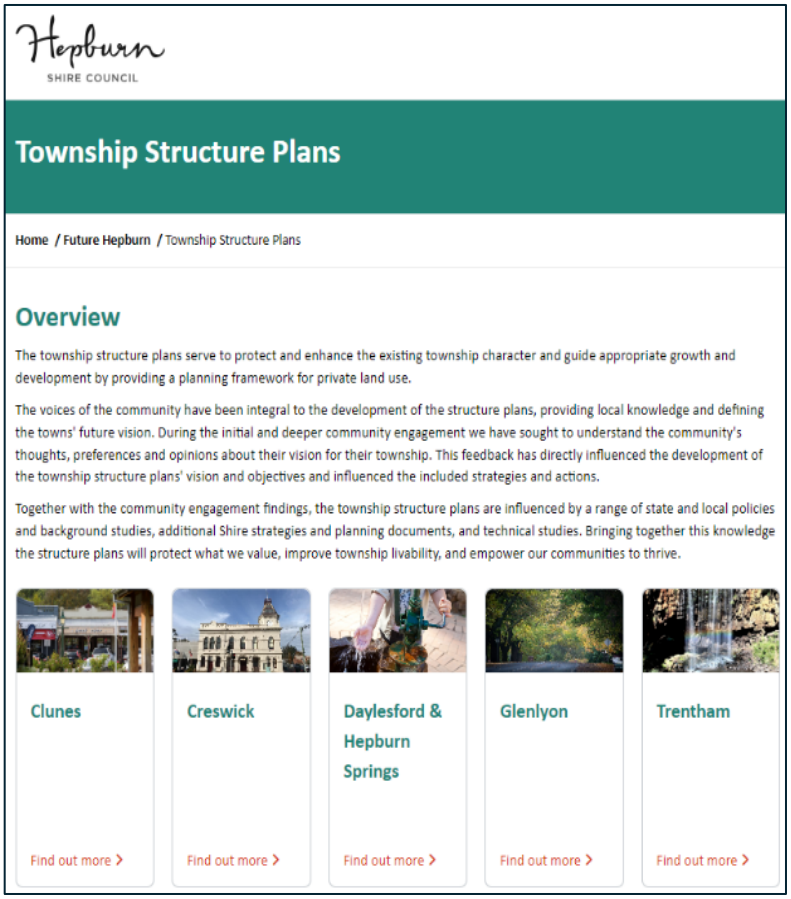


Image 3 – Future Hepburn

9.2 Why is Onsite Wastewater Important?

There are 123 declared special water supply catchment areas in Victoria. Hepburn Shire Council is one of the few Local Government Areas with the entire municipality within declared special water supply catchments. This means all Council decisions regarding permits or compliance with existing OWMS must be thoroughly assessed, as the risk to the health of the community and environment is elevated.

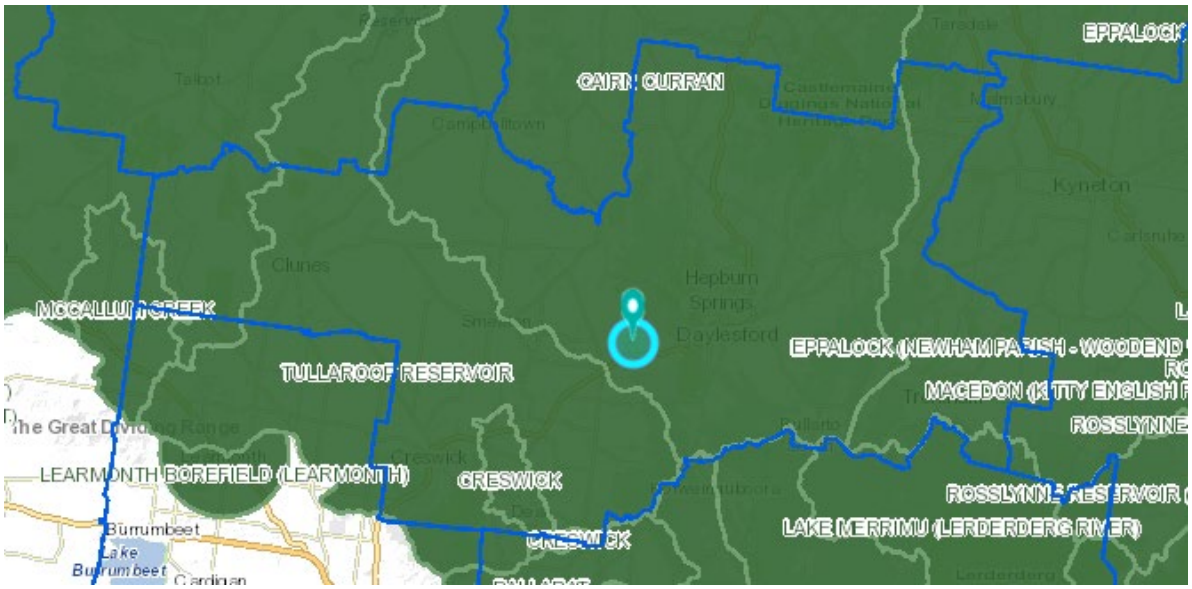


Image 4 - Declared Special Water supply catchment areas

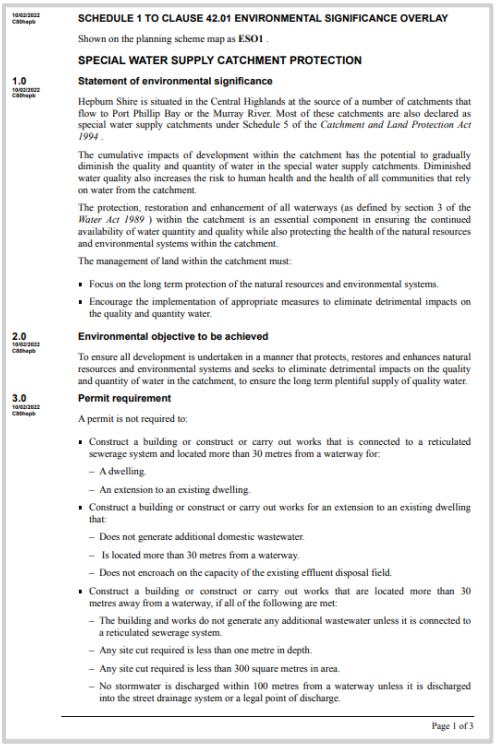
9.2.1 Environmental Significance Overlay (ESO)

ESO 1

Due to the entire municipality being within a declared water supply catchment, an ESO1 has been applied to all land. The objective of the ESO1 is to ensure all development is undertaken in a manner that protects, restores and enhances natural resources and seeks to eliminate detrimental impacts on the quality and quantity of water in the catchment, to ensure the long-term plentiful supply of quality water. The ESO1 results in all Planning Permits being referred to the relevant water authorities to provide comments and conditions.

ESO 2

ESO2 is applied in areas of the Shire with mineral springs. It aims to protect the mineral springs, their aquifers, and their environs, private domestic bores, and water bores that provide town water supply from the impacts of effluent and drainage.



SCHEDULE 1 TO CLAUSE 42.01 ENVIRONMENTAL SIGNIFICANCE OVERLAY

Shown on the planning scheme map as **ESO1** .

SPECIAL WATER SUPPLY CATCHMENT PROTECTION

1.0 Statement of environmental significance

Hepburn Shire is situated in the Central Highlands at the source of a number of catchments that flow to Port Phillip Bay or the Murray River. Most of these catchments are also declared as special water supply catchments under Schedule 5 of the *Catchment and Land Protection Act 1994* .

The cumulative impacts of development within the catchment has the potential to gradually diminish the quality and quantity of water in the special water supply catchments. Diminished water quality also increases the risk to human health and the health of all communities that rely on water from the catchment.

The protection, restoration and enhancement of all waterways (as defined by section 3 of the *Water Act 1989*) within the catchment is an essential component in ensuring the continued availability of water quantity and quality while also protecting the health of the natural resources and environmental systems within the catchment.

The management of land within the catchment must:

- Focus on the long term protection of the natural resources and environmental systems.
- Encourage the implementation of appropriate measures to eliminate detrimental impacts on the quality and quantity water.

2.0 Environmental objective to be achieved

To ensure all development is undertaken in a manner that protects, restores and enhances natural resources and environmental systems and seeks to eliminate detrimental impacts on the quality and quantity of water in the catchment, to ensure the long term plentiful supply of quality water.

3.0 Permit requirement

A permit is not required to:

- Construct a building or construct or carry out works that is connected to a reticulated sewerage system and located more than 30 metres from a waterway for:
  - A dwelling.
  - An extension to an existing dwelling.
- Construct a building or construct or carry out works for an extension to an existing dwelling that:
  - Does not generate additional domestic wastewater.
  - Is located more than 30 metres from a waterway.
  - Does not encroach on the capacity of the existing effluent disposal field.
- Construct a building or construct or carry out works that are located more than 30 metres away from a waterway, if all of the following are met:
  - The building and works do not generate any additional wastewater unless it is connected to a reticulated sewerage system.
  - Any site cut required is less than one metre in depth.
  - Any site cut required is less than 300 square metres in area.
  - No stormwater is discharged within 100 metres from a waterway unless it is discharged into the street drainage system or a legal point of discharge.

Page 1 of 3

Image 5 - Hepburn Shire Council Planning Scheme

9.2.2 Priority Waterways within our Shire

- Birch Creek
- Larni Barramal Yaluk, formerly known to be Jim Crow Creek
- Sailors Creek
- Kangaroo Creek
- Loddon River
- Coliban River
- Little Coliban River
- Creswick Creek
- McCallum Creek
- Middle Creek
- Tullaroop Creek

9.2.3 Water Sources

All water sources for townships must be protected from contamination

Table 2 - Potable water sources within Hepburn Shire

Township	Water Source
Clunes	A bore located in Tourello
Creswick	- Dean Reservoir - White Swan Reservoir
Daylesford	- Wombat Reservoir - Bullarto Reservoir
Trentham	Groundwater sources

9.2.4 Groundwater

A sizable portion of the Shire is considered a high-class category for groundwater suitable for potable drinking water supply. The region depends on this resource for urban water, domestic bores, and spring water enterprises.

This is highlighted in the image to the right, which has been taken from the Visualising Victoria's Groundwater website. It shows the Shire as either a1 or a2 for groundwater.

It is important to consider groundwater for all OWMS applications and assess compliance with existing systems, as system failures can contaminate groundwater.

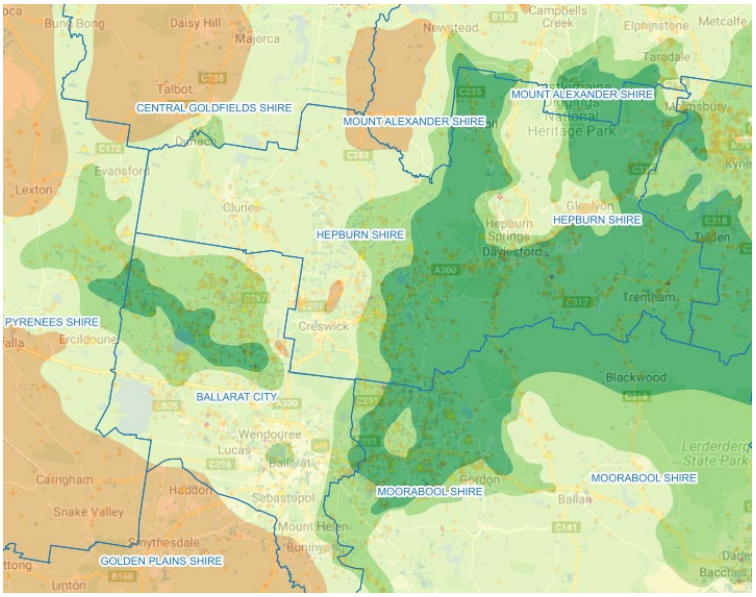


Image 6 - Groundwater mapping from Hepburn Shire Council mapping

9.2.5 Impacts of Climate Change in Hepburn Shire

Our climate is changing. In recent years, the Shire has experienced a change in rainfall patterns, increased high bushfire risk days, more storms and flooding events. Changes in our climate are predicted to continue, so it is crucial to consider the potential impacts of these natural disasters.

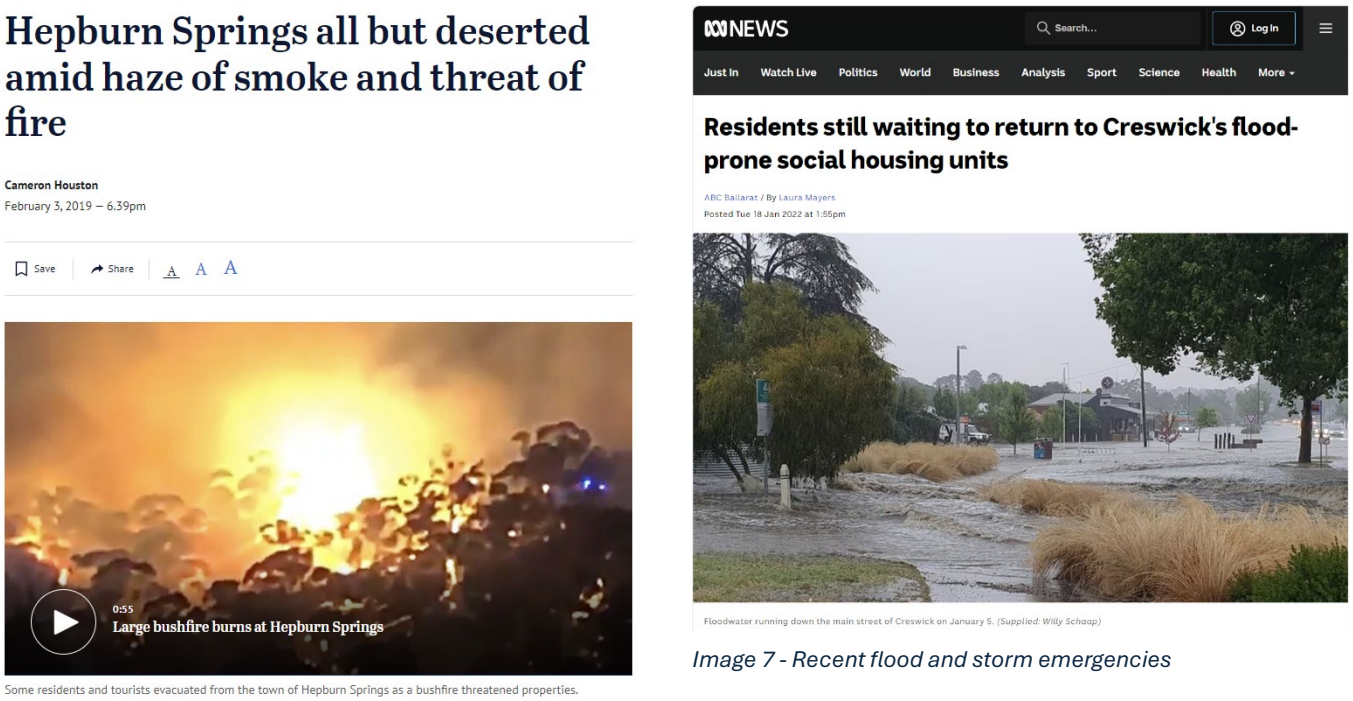


Image 7 - Recent flood and storm emergencies

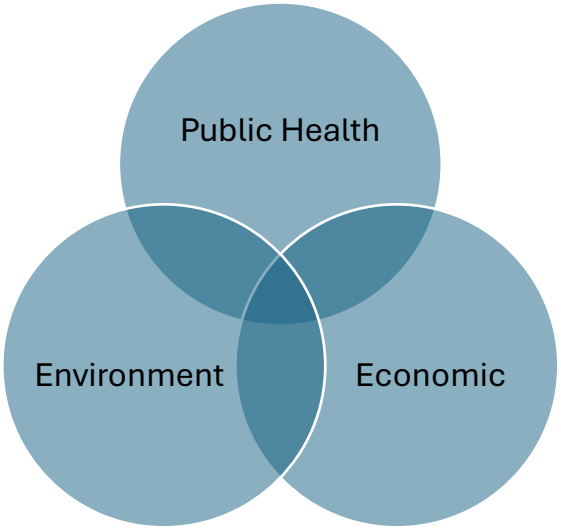
OWMS will be adversely affected after a flood and may be impacted after a bushfire. When reviewing applications, a key risk factor is the land subject to an inundation overlay, a planning control that identifies properties that may be affected by flood risk.

Authorised officers conduct Secondary Impact Assessments after emergencies and will assess the compliance of OWMS. If required, applications for alterations or new systems would be required.

Both these scenarios have occurred within Hepburn and other neighbouring Councils:

1. “My house was not even flooded, but the water saturation on our property has damaged the septic tank. I now need to apply for a new system.”
2. “My house is still standing after the fire, but the septic lines have been damaged as the fire trucks were parked on the distribution field. I now need to apply for an alteration permit.”

9.2.6 Onsite Wastewater Considerations



Our authorised officers make decisions relating to onsite wastewater, typical examples include:

1. Applications for subdivision
2. Applications for new or alterations of existing OWMS
3. Investigating community complaints relating to OWMS.

While protecting health and the environment is always at the centre of any decision, authorised officers must also consider the economic and legal implications.

Public Health

- Raw sewage can carry a range of pathogens, including bacteria, viruses, protozoa, intestinal worms, and inhaled molds and fungi.
- Human diseases caused by these pathogens range from mild gastroenteritis, cholera, dysentery, and hepatitis.
- Septic overflows can cause organic-rich pooling, increasing mosquito breeding and posing public health risk due to sewage exposure.

Environment

- Contamination of groundwater by nitrate, ammonia, and fecal pathogens.
- Seepage can raise the groundwater table, causing salinity in certain areas.
- Surface runoff adds nitrogen and phosphorus to water catchments, stimulating algal and weed growth and causes land degradation such as erosion.
- Effluent contains suspended solids, ammonia, and organic matter, which can impact certain aquatic plants and microorganisms.
- Effluent can be carried into other bodies of water, causing further pollution.

Economic

- For homeowners, replacing failing systems or connecting to reticulated sewage can be extremely expensive.
- Poor OWMS management decreased land amenity and economic value.
- Registered premises, such as food businesses or prescribed accommodation, may require alterations or replacement of OWMS if practice or capacity changes.

9.3 Stakeholders

There is a range of stakeholders that contribute to the protection of health and the environment.

9.3.1 Community

The community is responsible for complying with the General Environmental Duty (GED) associated with wastewater, which includes:

- obtaining the required Permits and Certificates before installation and use
- obtaining a permit to make alterations to an existing OWMS
- engaging with qualified plumbers and assessors

Any application for a new OWMS must demonstrate that the proposed use, development, or subdivision of land will comply with all applicable laws, policies, and guidelines outlined in this plan.

All landowners and occupants are legally required to ensure their OWMS operates effectively. Any system failures pose a significant risk to human health and the environment. The Council highlights obligations required under the GED relating to OWMS maintenance, including:

- operate and maintain OWMS in a way that minimises risks to human health and the environment - *Environment Protection Regulations Section 159 (1)*
- take all reasonable steps to ensure the system is maintained in good working order (*Environment Protection Regulations Section 159(2)*
- ensure the OWMS does not overflow - *Environment Protection Regulations Section 159(3)*
- keep and hold maintenance records for 5 years after each maintenance activity (and make them available to councils or EPA for inspection when requested), *Environment Protection Regulations Section 162(1) & (2)*
- notify the council as soon as practicable if the system poses a risk of harm to human health or the environment or is otherwise not in good working order, *Environment Protection Regulations Section - 161(2)*

"The general environmental duty (GED) is at the centre of the Environment Protection Act 2017 and it applies to all Victorians, and all businesses located in Victoria. The GED states that you must manage your activities to reduce the risk of harm to human health and the environment from pollution or waste". - EPA Victoria 2021

Strategy 1 – As we progress through the lifecycle of this plan, we will foster ongoing and productive collaboration with all stakeholders.

Action	Action	Outcomes	Timeframe
1.1	Develop targeted community resources, including: • new resident kit for properties not connected to reticulated sewer • managing OWMS in your rental property or holiday accommodation	This action will promote the General Environmental Duty, and community responsibilities relating to OWMS.	December 2024
1.2	Commence bi-annual OWMS reporting data from Council to the Water Authorities	• improved data sharing will foster consistent decision making • data will contribute to Water Authority decision making • opportunity to align wastewater priorities	February 2025
1.3	Commence bi-annual Council and Water Authority stakeholder meetings	Stakeholder meetings will facilitate good collaboration between Council and the Water Authorities.	February 2025
1.4	Explore the possibility of a clause 66 Agreement under the Planning and Environment Act between Council and the Water Authorities.	• generate efficiencies • priorities effort based on risk	December 2026

9.3.2 Water Corporations

Both rural and urban water corporations are responsible for assessing and responding to all referred applications under Clause 66 of council planning schemes for Special Water Supply Catchments, as listed in Schedule 5 of the Catchment and Land Protection Act 1994.

Rural Water Corporations

Rural Water Corporations provide water services in rural areas for irrigation, recreation, domestic use, stock, and bulk water to urban water corporations for drinking water purposes. The Rural Water Corporations serving areas within Hepburn Shire are Goulburn-Murray Water and Southern Water.

Goulburn-Murray Water

Goulburn-Murray Water (GMW) is the largest rural water corporation in Australia. It manages the storage, delivery, and drainage systems for 70% of Victoria's stored water resources, 50% of Victoria's underground water supplies, and 35% of unregulated water resources.

GMW has functions, requirements, and powers under various Acts, including (but not limited to) the *Water Act 1989*, the *Safe Water Drinking Act 2003*, the *Planning and Environment Act 1987*, and the *Catchment and Land Protection Act 1994*. GMW manages 23 water storages, which can hold approximately 11,400 GL of water, and manages more than 100,000ha of public land surrounding these storages. GMW provides the following customer services:

- irrigation water supply
- domestic and stock water supply
- environmental watering
- supply of bulk water to various urban water corporations for urban water supply

GMW's functions are focused on:

- delivering water services to the region
- monitoring the quality of water
- building and maintaining infrastructure
- managing GMW's water supply
- meeting legislative and reporting requirements

GMW licences and manages services to customers who extract surface and groundwater under the Water Act 1989. GMW issues and administers groundwater licences and develops and implements management plans on behalf of the Minister for Water. GMW has been involved in reviewing the current Mineral Springs (MS) Master Plan, which was developed in liaison with all relevant stakeholders, including Hepburn Shire Council.

GMW undertakes regular water quality monitoring within the major storages (Newlyn Reservoirs and Hepburn Lagoon). A large portion of the rivers, streams, and groundwater in our region are monitored by the Victorian Water Quality Monitoring Network. Water quality and quantity data is available at https://data.water.vic.gov.au

The following groundwater management plans are in place with the Hepburn Shire Council:

- the Central Victorian Mineral Springs GMA Local Management Plan
- Loddon Highlands WSPA Groundwater Management Plan

"Our team refers to Council's OWMP township profile when considering a planning permit proposal". – Central Highlands Water

Southern Rural Water

Southern Rural Water is a rural water corporation that services a very small portion of the Shire in the southeastern end of the Shire near Trentham. Within the areas they service, Southern Rural Water provide the following services:

- Deliver water from the catchment to the farm gate
- Regulate and distribute surface and groundwater
- Supply bulk water irrigators, water authorities manage and release environmental flows according to drought levels.

"Can we establish risk-based processes that will create efficiencies for the Water authorities, and speed up the application process for the customer?" *- Hepburn Shire Council Officer during an internal council OWMP planning session, April 2024*

Urban Water Corporations

Coliban Water is an urban water corporation that provides drinking water and wastewater services to central and northern Victorian communities, maintaining and operating over 50 reservoirs and water storage basins, to deliver raw water for drinking water supplies for irrigation, commercial, domestic and stock purposes. This infrastructure services approximately 160,000 customers across 16,500 square kilometres of Victoria. Within Hepburn Shire, Coliban Water provide water and sewer to the township of Trentham and surrounds, including Lyonville, Denver and Drummond.

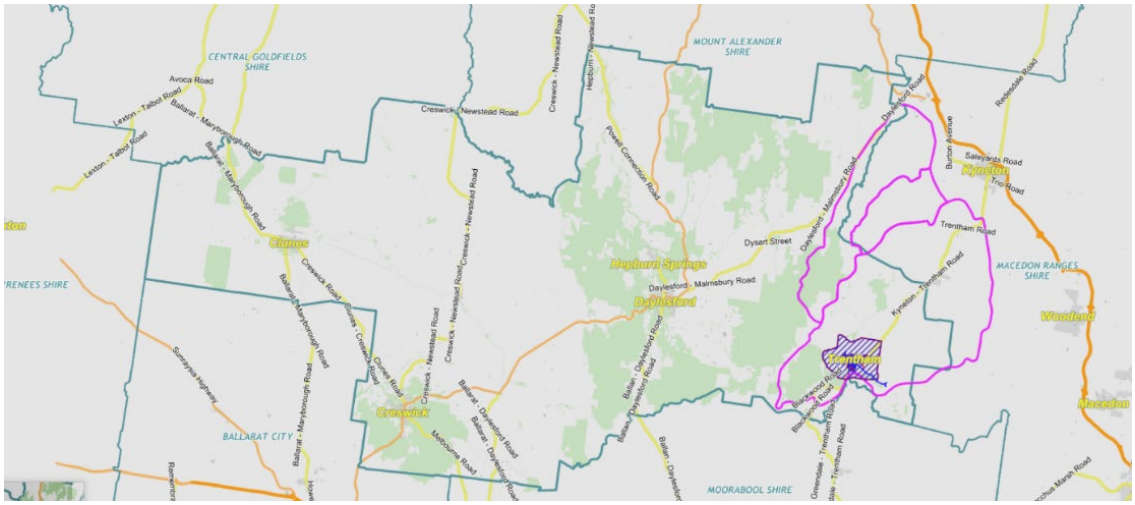


Image 8 - Coliban Water boundary

Coliban Water projects and strategies relating to Hepburn Shire Council's OWMP:

- Trentham Groundwater Project
- Trentham Stormwater risk assessment project
- Trentham Clear Water Storage Tank Project
- Building for the future
- Urban Water Strategy

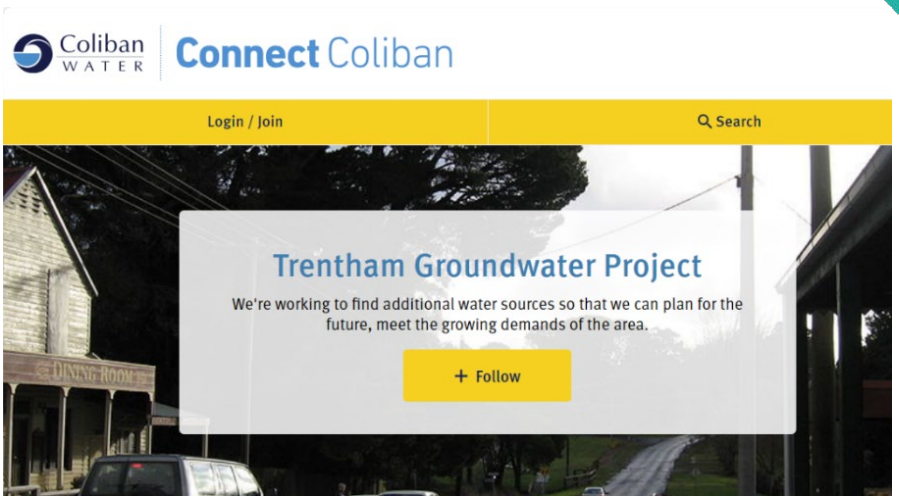


Image 9 - Coliban Water project

"The risks of impacts to public health and the environment posed by OWM systems within the Eppalock Special Water Supply Catchment is of critical importance to Coliban Water".
- Coliban Water statement, 2024

Central Highlands Water

Central Highlands Water is an urban water corporation that provides water and sewer to Clunes, Creswick, and Daylesford townships. The catchment boundary covers most of the Shire, excluding Trentham and the surrounding areas, as shown in image 10 below.

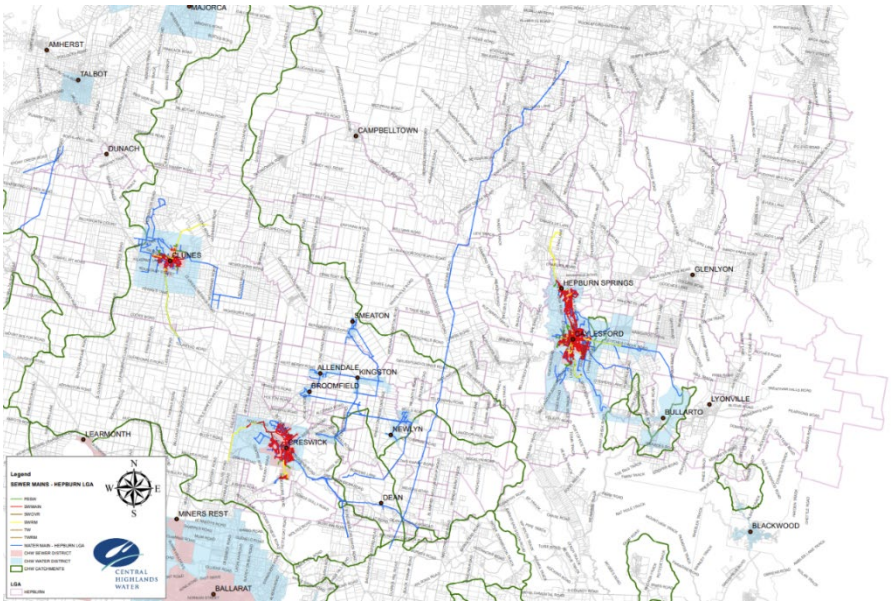


Image 10 - Central Highlands Water sewer district

Central Highlands Water projects, plans and strategies relating to Hepburn Shire Council's OWMP:

- More Than Water – Our 2040 Strategy, which identifies core business obligations and the opportunity to innovate and deliver better outcomes for everyone
- Daylesford & Hepburn Springs, Creswick and Clunes Integrated Water Management Plan

Image 11 - Integrated water management plan

"We would like to express the need for Council to be doing pro-active audits of in-use OWMS."
- Water Authority participant during OWMP planning, March 2024

9.3.3 North Central Catchment Management Authority (NCCMA)

The North Central Catchment Management Authority is established under the Catchment and Land Protection Act 1994 and has powers and functions under the Water Act 1989. This authority works with relevant Local Government Areas to ensure OWMS do not impact on their water supply catchments.

The North Central Catchment Management Authority is also a referral authority for planning applications under the Hepburn planning scheme.

"Our vision is sustainably managed land, water and biodiversity resource that support productive and prosperous communities in a changing climate." - North Central CMA Vision Statement

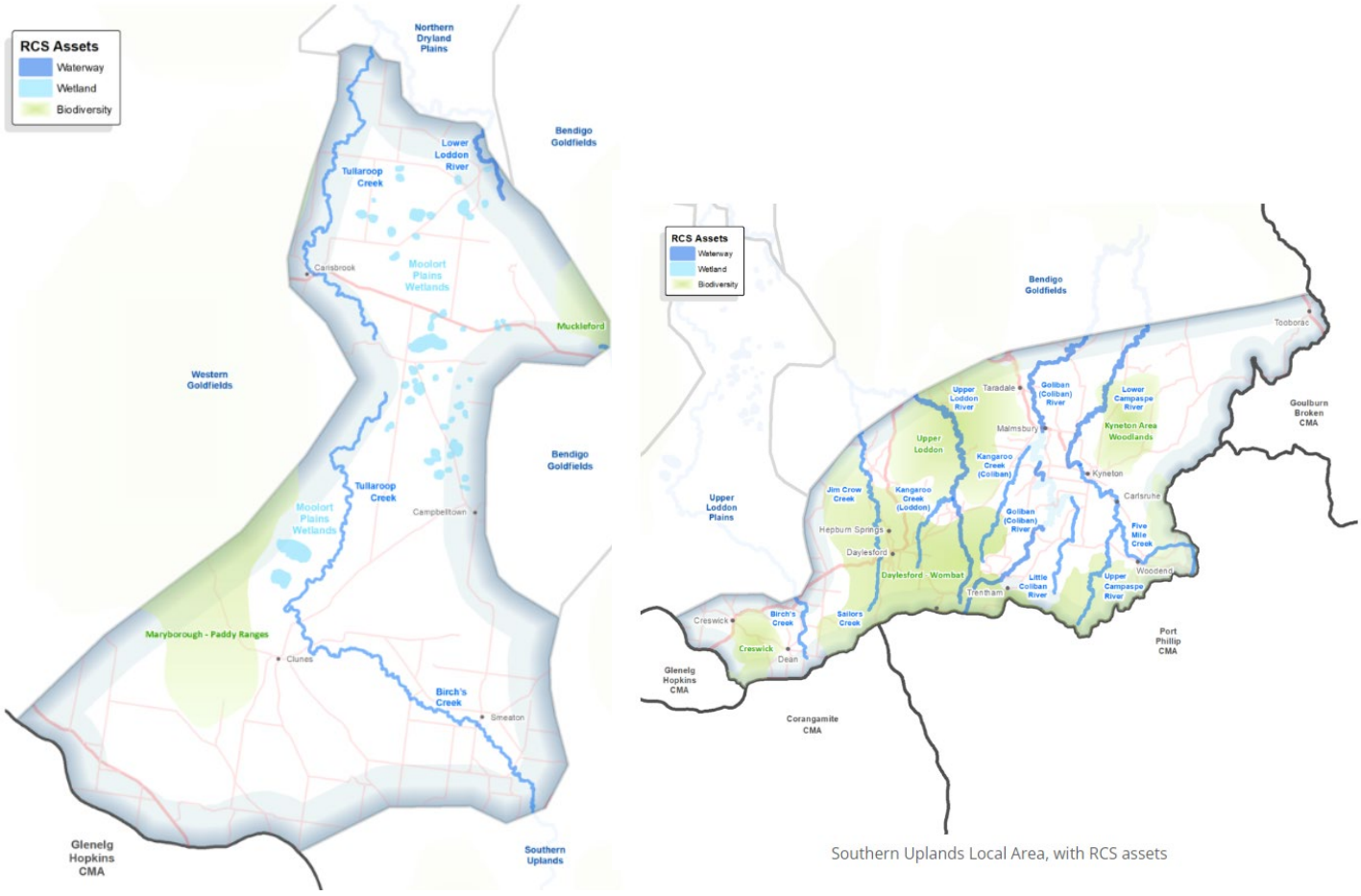


Image 12 - North Central Catchment Management Authority major waterways in or surrounding Hepburn Shire Council

9.3.4 Environment Protection Authority Victoria

The EPA are the Environmental regulator in Victoria, and their responsibilities relating to this OWMP include:

- administering the Environment Protection Act and Regulations
- developing policies and guidelines for regulators to apply
- providing guidance material for the community
- provide information regarding the types of OWMS that can be installed in Victoria via the Certificate of Conformance process
- approval of systems discharging more than 5,000 litres per day.

9.3.5 Department of Energy, Environment and Climate Action (DEECA)

DEECA is responsible for managing water resources, climate change, bushfires, public land, forests, and ecosystems in Victoria. The Council may refer to DEECA for specialist advice when OWMS impacts land or water resources.

9.3.6 Victorian Department of Health

The Victorian Department of Health (DH) have responsibilities under the *Public Health and Wellbeing Act 2008* and administers the *Safe Drinking Water Act 2003*.

9.3.7 Service providers

- land capability assessors - undertake land capability assessments for OWMS.
- plumbers - associated pipework must be installed by a licenced or registered plumber. Only licenced plumbers can issue a compliance certificate for plumbing work
- building surveyors - building surveyors ensure sites with OWMS have appropriate permits/certification before issuing an occupancy permit or a certificate of final inspection
- service technicians - complete prescribed servicing and provide service reports to Council when required

9.4 Our Achievements from the last OWMP

Hepburn Shire Council's first OWMP was published in 2014 (formerly referred to as a Domestic Wastewater Management Plan or DWMP). Throughout the duration of the 2014 plan, the Council has continued to make progress regarding the committed action items and has adapted to ongoing changes related to wastewater, such as system alterations and legislative updates.

Here are some key wastewater achievements by the Council.

9.4.1 Audits of high-risk properties

An audit program focused on properties within 100 meters of a waterway. 792 properties were audited, and the results are presented in Figure 1.

The audit program's findings are that only 1% of the audited properties were assessed as posing a high risk to the health of the community or environment.

Disposal Risk Legend

- satisfactory means no identified risk.
- low means minor non-health risks to occupier identified
- medium means there is a potential health risk to occupier
- high means there is an identified health and or environmental risk identified.

Figure 1 - Hepburn Shire Council audit summary

9.4.2 Policy development and implementation

The 2014 OWMP established the need for the development of policy. This action item was completed in 2023, and Council authorised officers are applying the following policies and procedures:

- Hepburn Shire Council Health and Community Safety Enforcement Policy.
- Hepburn Shire Council Onsite Wastewater Management Procedure.
- Hepburn Shire Council Health and Community Safety Infringement Procedure.

9.4.3 Adjusting to new laws and regulations

Since the last OWMP, the environmental protection laws have changed. Before the commencement of the new laws, a review was conducted to ensure that Council processes are consistent with the intention of the new laws. This has included:

- updating fees for permits to reflect the statutory fee
- implement the new enforcement powers available under the Environment Act, and Environment Regulations.

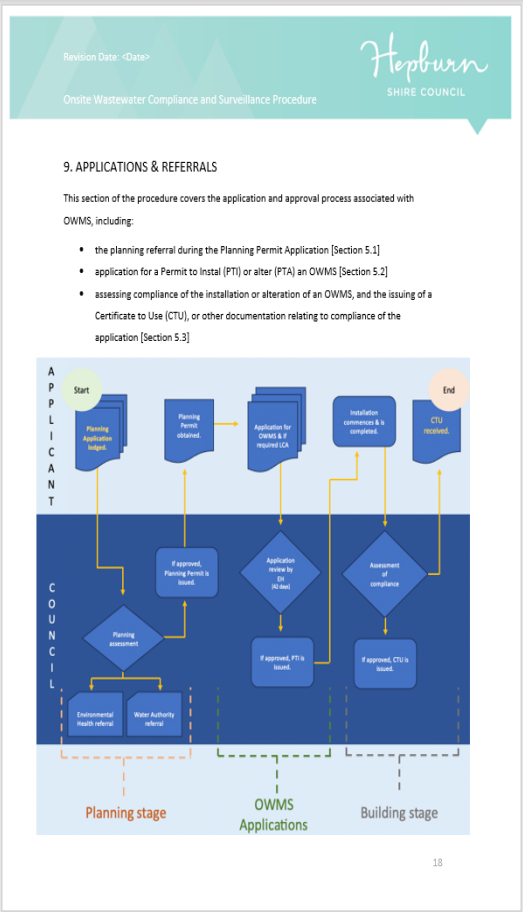


Image 13 - Hepburn Shire Council Wastewater Management Procedure

10. Risk Framework

"OWMPs should not be static documents as risks from onsite wastewater can change rapidly. It is important that OWMPs are flexible to allow updated risk assessments when needed." - Planning permit applications in special water supply catchment areas guideline

A core component of the OWMP is the locality risk assessment, which is informed by the ISO 31000 risk management process and the Onsite Wastewater Management Plan Risk Assessment Guidelines Final Report – June 2022. The locality risk assessment allows the Council to evaluate the level of risk for each locality within the Shire into low, medium, and high-risk categories.

It is essential to highlight that the risk assessment serves as a guide to inform decision makers of important wastewater considerations based on a locality's geographical area. Although this risk assessment may be referred to when assessing an application or when making a compliance decision relating to an individual property, an officer will always make a new risk assessment based on the characteristics and circumstances of the land being assessed.

Strategy 2 – The protection of the public health and environment is at the centre of wastewater decisions.

Action #	Description	Outcomes	Timeframe
2.1	Annual internal review of action items identified in the OWMP.	The annual review will provide an opportunity for the Council to assess the progress of the actions and assess requirements for update.	Annual
2.2	Implement an audit program to ensure property owners fulfil their responsibilities under the GED.	• ongoing oversight of existing OWMS in high-risk areas. This oversight may provide opportunity to identify risks before OWMS failure • any OWMS not captured on Councils record management system will be included, improving Councils data.	Implementation in 2025
2.3	Continue to identify opportunities to promote the importance of wastewater with other decision makers.	Improved collaboration	Ongoing
2.4	Increase opportunities for joint onsite assessments for high-risk planning permit applications	Improved collaboration	Ongoing
2.5	Explore avenues to lobby the Environment Protection Agency to allow conditions to be included on Certificate to Use, and the requirement for mandatory serve reporting to be re-introduced	Improved regulatory oversight	December 2028

10.1 Hepburn Shire Risk Assessment Considerations

The risk assessment considered the following risk factors:

10.1.1 Land Characteristics

Lot Size

Lot size links to the likelihood of inadequately treated wastewater discharging off-site, which contaminates water bodies (surface water and groundwater). The median lot size per locality serves as the primary data source for the risk assessment. Properties or lots under 0.4 hectares increase a locality's risk profile. Any new applications for small lots will be critically assessed. If approved, more stringent requirements and conditions will be applied to ensure that the land can adequately treat wastewater on site. The assessment excludes crown land.

Risk Factor Bands Relating To Lot Size		
Low	**Medium**	**High**
Greater than 1 hectare	0.4 – 1 hectare	Less than 0.4 hectare

Table 3 Risk Factor Bands Relating to Lot Size

Topography

Topography considers the area's landscape, including mountains, valleys or surface rivers. Topography relates to the likelihood of overland runoff transferring contaminants off-site. The slope of a site/area significantly impacts the ease with which effluent can transfer offsite in both dry and wet conditions, and therefore the risk posed by an onsite system. Site topography can influence the likelihood of untreated onsite wastewater management system run-off entering water bodies (primarily watercourses and potable water offtakes).

Based on the geographic area of the Hepburn Shire Council, topography has been assessed as low for all localities.

Risk Factor Bands Relating To Topography			
Irrigation method	**Low**	**Medium**	**high**
Surface irrigation	less than 6%	6 – 10%	>10%
Absorption systems	less than 6%	6-15%	>15%
Pressure-compensating subsurface irrigation	less than 10%	10-30%	>30%

Table 4 Risk Factors Bands Relating to Topography

Soil Type

Soil types are an essential indicator for determining appropriate OWMS types. Examples of soil types include:

- Gravels and sands – soil category 1 (not typically found within Hepburn Shire)
- Sandy loams – 2a and 2b
- Loams – 3a, 3b
- Clay clams – 4a, 4b and 4c
- Light clays – 5a, 5b and 5c
- Medium to heavy clays – 6a, 6b and 6c

Effluent discharge to soils with low permeability is more likely to travel further with a higher pathogenic/nutrient load and contaminate nearby waterways.

Council receives soil types for a given property in the Land Capability Assessment (LCA), and soil types are assessed for the locality risk assessment through a review of LCAS. Council acknowledges that more data is required relating to soil types across the Shire and has included this as an action item.

Risk Factor Bands Relating To Soil Type		
Low	**Medium**	**High**
Soil category 4	Soil categories 2 and 3	Soil categories 5 and 6

Table 5 Risk Factor Bands Relating to Soil Type

It is noted that soil category one is not expected within the Shire, and soils in categories 2 and 3 may indicate backfilling. Council has assessed all localities as low, except for Clunes. As with all risk factors, this will be evaluated for each case at hand, and individual properties may have a higher risk rating depending on their soil type.

Groundwater Depth and Quality, and Aquifers

A shallow groundwater depth increases the likelihood of contamination. The council has applied the depth from the disposal site to the highest seasonal water table, using submitted Land Capability Assessments and Visualising Victoria's Groundwater mapping tools, as shown below.

Risk Factor Bands		
Low	**Medium**	**High**
>10m or confined aquifer	5-10 meters	<5 meters

Table 6 Groundwater Depth and Qualify and Aquifers

When assessing applications, Authorised Officers will review information surrounding aquifers. This assessment will be made through the review of a Land Capability Assessment. For the purpose of this risk assessment, all localities will be assessed as low risk; however, they will be assessed on a property-by-property basis.

Proximity to Water Source and Potable Water Supply Offtake

Proximity to a potable water supply offtake impacts the likelihood of contamination from onsite treatment system failure in conjunction with risk factors that impact the receptor pathways.

This information was obtained via a GIS assessment of water sources and potable water supply offtakes.

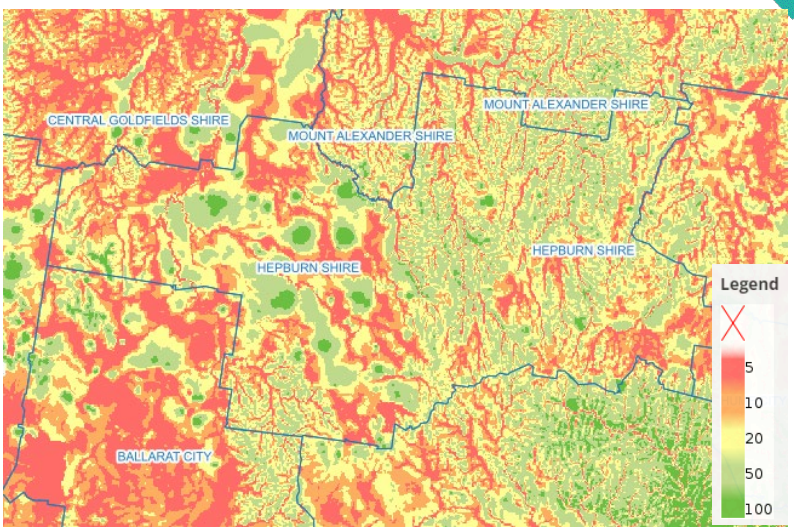


Image 14 - Groundwater depth

Risk Factor Bands Relating To Proximity to Potable Water Supply Offtake		
Low	**Medium**	**High**
Greater than 2 km	100 – 500 meters	less than 100 meters

Table 7 Risk Factor Bands Relating to Proximity to Potable Water Supply Offtake

Risk identification methods:

- GIS mapping
- Visualising Victoria's Groundwater
- Land Capability Assessment data

Location of Groundwater Bores

The number of systems near groundwater bores increases the likelihood of contamination that can occur in the event of an overflow or seepage through soil from the onsite system, similarly to the number of systems in a population centre to watercourse contamination.

"The proximity to ground water bores is a top risk factor in places like Glenlyon".
- Hepburn Shire Council Environmental Health Officer, November 2023

Risk identification methods:

- GIS mapping
- catchment data from the water authorities
- data sharing with Goulburn-Murray Water
- publicly available information such as Visualising Victoria's Groundwater (VVG)

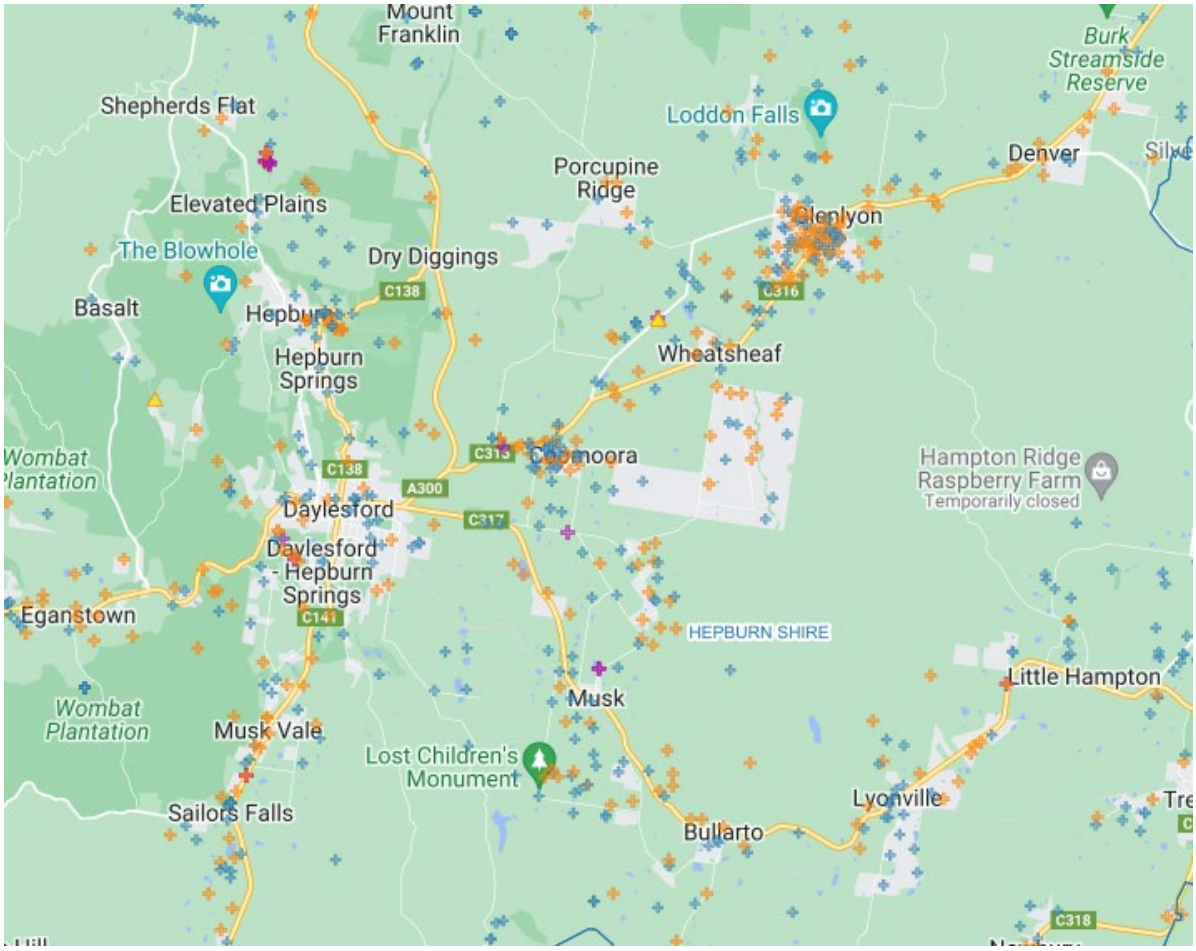


Figure 15 - Groundwater bore GIS location

Risk Factor Bands Relating to Proximity to Bores		
Low	**Medium**	**High**
Greater than 100 meters	50 – 100 meters	Less than 50 meters

Table 8 Risk Factor Bands Relating to Proximity to Bores

Proximity to Floodplains

The proximity of on-site wastewater management systems to floodplains threatens groundwater, surface water, and potable water offtakes through system inundation and the transport of contaminants. The higher the AEP rating, the more likely a flood will occur on the system site and the system will fail. Data was obtained by assessing the Land Subject to Inundation overlay.

Risk Factor Bands Relating to Proximity to a Flood Plain		
Low	Medium	high
<1% AEP	1 – 5% AEP	>5% AEP

Table 9 Risk Factor Bands Relating to Proximity to a Flood Plain

Risk identification methods:

- GIS mapping
- Council Planning Scheme Overlays, such as land subject to inundation overlays
- VicPlan mapping tool, which is publicly available via mapshare.vic.gov.au

Image 16 - Land subject to inundation mapping overlay in Creswick

Image 17 - Land subject to inundation overlay in Clunes

10.1.1 Development Density and Land Use

Number of Onsite Systems In the Population Centre

The increasing number of on-site systems in a population centre increases the likelihood that contaminants will reach an endpoint. This risk factor is an indicator of density and assumes an increased likelihood of contamination in a highly dense area. The number of on-site systems and other consequence risk factors covers cumulative load calculations.

Council applies proactive consideration of the cumulative risk of existing and future OWMS on water quality that can arise from increased dwelling density.

Risk Factor Bands Relating to OWMS Density		
Low	**Medium**	**High**
<10	10 – 200	>200

Table 10 Risk Factor Bands Relating to OWMS Density

Risk identification methods:

- GIS mapping
- Council data relating to active systems (certificate to use)

Council acknowledges that there are historical OWMS that are not on Council's records. An opportunity to audit the number of actual systems within the Shire has been included as an action item [action 2.2]

Development Density in Glenlyon and the Surrounding areas

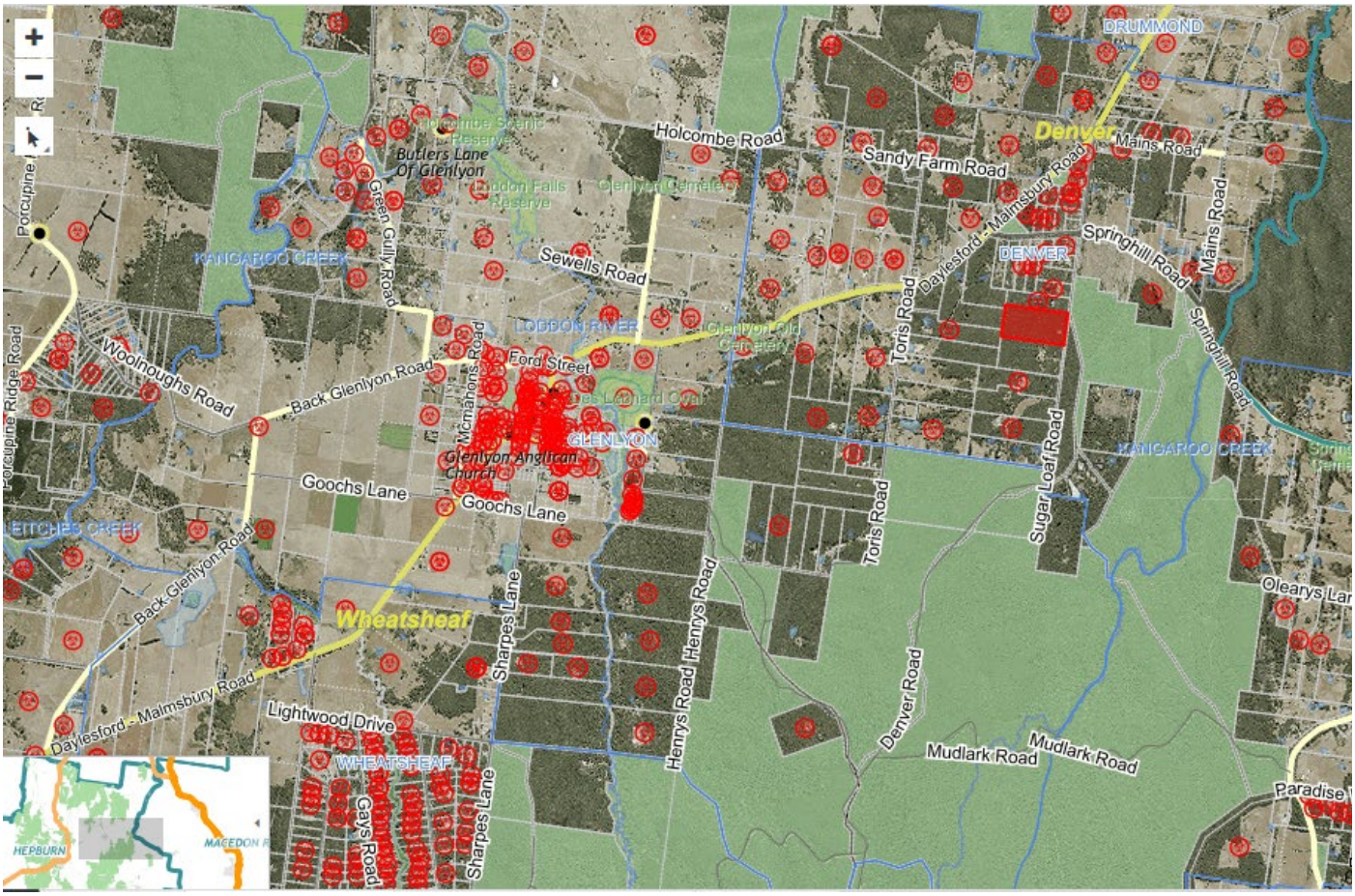


Image 18 - Onsite wastewater management system GIS data for Glenlyon and surrounding areas

10.1.2 Weather Conditions

Rainfall

The frequency and level of rainfall events increase the likelihood of contamination. Overland runoff is one key pathway mechanism by which contaminants are carried offsite and enter waterways, increasing soil infiltration. Increased frequency of rainfall also increases the risk of saturation, impacting evapotranspiration.

Risk Factor Bands		
Low	**Medium**	**High**
Annual mean rainfall (mm) 0 - 400	Annual mean rainfall (mm) 401 - 800	Annual mean rainfall (mm) greater than 800

Table 11 Risk Factor Bands Relating to Rainfall

The risk identification method included publicly available information from the Australian Government Bureau of Meteorology.

10.1.3 Permit status

Permit status is a significant risk factor, as it provides meaningful information and data to the Council, including:

- Age of the system
- Type of system
- Exact location of the system, and distribution fields
- Compliance information
- Recent audit dates

Risk Factor Bands		
Low	**Medium**	**High**
Greater than 75% of properties with a permit	50 – 75% of properties with a permit	Less than 50% of properties with a permit

Table 12 Risk Factor Bands Relating to Permit Status

11. Applying the Risk Assessment

It is important to highlight that within each locality, there may be localised areas that pose a higher or lower risk than the determined risk rating. Hepburn Shire Council would like to reinforce that all applications or cases being reviewed will always have an authorised officer assessment, irrespective of the risk rating.

When conducting the risk assessment, it was identified that the most critical risk factor for our Shire was lot size, as the larger the lot size, the higher the chance of wastewater being effectively contained within the land application area of the OWMS. Based on the Hepburn Shire Council risk assessment, a locality with a median lot size greater than 0.8ha that is mostly used for farming will be considered low risk, irrespective of the other risk factors.

The highest risk factor will determine the overall risk rating for any locality with lot sizes less than 0.8ha. To provide context, please refer to the example below, as large lot sizes reduce the risks associated with proximity to potable water supply and groundwater bores.

Risk Assessment for Ullina is low

"Ullina is a perfect example why the lot size should have more weighting in the risk assessment. Although there is a high number of ground water bores and important waterways, these risk factors can be managed due to the large size of the land during the OWMP permit process".

- Environmental Health Officer statement during the risk assessment review April 2024

Characteristics by Locality

Residents and visitors are drawn to Hepburn Shire Council for its vast and diverse landscape, nature, and mineral springs. It is essential to promote that these diverse natural features within the Shire lead to different wastewater priorities, challenges and limitations depending on where you are within the Shire. This section of the OWMP describes the regional characteristics and confirms the risk rating for each locality within the Shire.

Risk Factor - Ullina	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores		X	
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Number of accommodation and commercial sites	*Not assessed*		
Rainfall	X		
Overall Risk Assessment	**Low**		

According to the Council's record management system, there are 2,222 active OWMS within the Shire. The council acknowledges that data relating to the number, type, location, and functionality of OWMS is incomplete. Therefore, the Council will endeavour to make our records as accurate as possible throughout the life of this plan, and this has been captured as an action [Action Number 2.2].

There is incomplete data on the number, type, location, and functionality of septic tank systems in the municipality. Therefore, it is recommended that a dedicated inspection program be implemented to accurately assess the risks of the existing on-site systems and sensibly plan for their ongoing management.

"Hepburn Shire is so diverse. The wastewater considerations in Bullarto are completely different to Blampied. Parts of the Shire have high rainfall, others frequently flood. We have flat farming areas and dense bushland. And of course, we some important waterways run through the Shire and townships that use groundwater as their potable drinking supply."
- Council Officer during OWMP planning, January 2024

11.1 Clunes and Surrounding Areas

Famous for historic gold mining, Clunes and the surrounding areas have been transformed into a region abundant with events, antique stores, vineyards, wineries, and nature. Although located within proximity to Ballarat, Maryborough, and Creswick, the Central Highlands Regional Growth Plan (2014) expressed limited growth potential for Clunes due to extensive areas of high-quality agricultural and farming land to the north, east, and south of the town, and forests and woodlands with medium to high biodiversity value are located to the north-west and southwest.

This area has fertile volcanic soils and has been extensively cleared for agriculture, which consists of dryland cropping and grazing. The terrain largely comprises a basaltic plain frequently interrupted by extinct volcanoes. Volcanic eruptions have delivered a legacy of basalt flows and scoria cones. Ancient valleys have been infilled with basalt flows, forming extensive plains. Well-drained soils formed on the basalt are deep, red, fertile, and well-suited to horticultural pursuits.

Number of Active OWMS in the localities surrounding Clunes

There are 205 OWMS active within localities near the major township of Clunes on the Council's record management system.

Key features |challenges | priorities

- Located in the Loddon River Australian Water Resource Council river basin, with a number of essential waterways including Birch Creek and Creswick Creek
- Middle Swamp is recognised as a wetland asset by the North Central Regional Catchment Strategy
- The Tullaroop Creek catchment management plan seeks to restore the catchment and mitigate flooding risks

"Council is urged to limit the number of dwellings in the asea to maintain the environmental health of Middle Swap with the McDonalds Drive and Fairview Road contributing to OWMS density risks impacting the Tullaroop catchment."
- Central Highlands Water and the North Central Catchment Authority statement

11.1.1 Clunes and Surrounding Areas Locality Risk Ratings

Campbelltown

A small locality within Hepburn Shire, with most of Campbelltown located within Mount Alexander Shire Council. Key features of significance include Joyce's Creek to the east of the locality.

Special Water Supply catchment: Cairn Curran

Number of Current OWMS: 1

Risk rating explanation*:* Land proximity to Joyce's Creek is the primary consideration when assessing Campbeltown. However, due to its large lot size, flat land, and low OWMS density, Campbeltown is considered low risk.

Risk Factor - Campbelltown	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		X
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall	X		
Permit status			X
Overall Risk Assessment			

Clunes

There is a flood subject to inundation overlay for parts of Clunes, and floods have caused recent challenges with major flooding events occurring in 2010, 2011, 2016 and 2022. The township of Clunes has a connection to reticulated sewer via bores in Tourello and a sewerage connection. However, the outlying areas of Clunes are unsewered. Tullaroop Creek moving south into the locality forks off into Creswick Creek and Birch Creek, which are waterways of significance.

Special Water Supply catchments: Tullaroop Reservoir and Loddon River (Laanecoorie)

Number of Current OWMS: 195

Risk rating explanation: Assessed as high due to the significance of Creswick and Birch Creek. Individual applications or assessments of existing OWMS may be assessed as a lower risk depending on case-by-case risk factors, such as proximity to waterways.

Risk Factor - Clunes	Low	Medium	High
Lot size		X	
Topography	X		
Soil type			X
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake			X
Location of groundwater bores			X
Proximity to flood plains		X	
Number of onsite systems in the population centre		X	
Rainfall	X		
Permit status		X	
Overall Risk Assessment	**High**		

Dunach

This sparsely populated area is a densely vegetated landscape that crosses with Central Goldfields Shire Council. A key feature of the locality is the Dunach Nature Conservation Reserve. Low-density occupancy is mostly used for a residential rural lifestyle, and mixed farming and grazing are throughout the area.

Risk Factor - Dunach	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains			
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status			X
Overall Risk Assessment	**Low**		

Special Water Supply catchments: Loddon River (Laanecoorie) and Tullaroop Reservoir

Number of Current OWMS: 3

Risk rating explanation: Land proximity to McCallum Creek is the primary consideration when assessing the parcels of land within Hepburn Shire. Low OWMS density and large lots have reduced the risk rating to low.

Evansford

Evansford crosses over with the Pyrenees Shire Council, and no OWMS are recorded on the Council's record management system. The land within the Hepburn Shire Council is mainly used for mixed farming and grazing. Farmland provides some catchment of the Evansford Reservoir, which is on McCallum Creek.

Special Water Supply catchments: McCallum Creek and Loddon River (Laanecoorie)

Number of Current OWMS: 0

Risk rating explanation: Vast parcels of land reduce the risk of OWMS's impact on the community and environment.

Risk Factor - Evansford	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status			X
Overall Risk Assessment	**Low**		

Glengower

The locality of Glengower is shared with the Central Goldfields Shire Council. The land is used for mixed farming and grazing. Middle Creek is a waterway of significance.

Special Water Supply Catchments: Tullaroop Reservoir and Cairn Curran

Number of Current OWMS: 1

Risk rating explanation: Vast parcels of land reduce the risk of OWMS impact on the community and environment. Property owners would need to consider the proximity to Middle Creek.

Risk Factor - Glengower	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains		X	
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status			X
Overall Risk Assessment	**Low**		

Lawrence

A low-density residential area of the shire with key features including a number of mines and Birch Creek, which is a waterway of significance. The land is mainly used for mixed farming and grazing.

Special Water Supply Catchment: Tullaroop Reservoir

Number of Current OWMS: 3

Risk rating explanation: Vast parcels of land reduce the risk of OWMS impact on the community and environment. The proximity to Birch Creek would need to be considered for individual lots of land, and depending on the proximity and other risk factors, applications may be assessed as medium or high risk.

Risk Factor - Lawrence	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake			X
Location of groundwater bores			X
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall	X		
Permit status	X		
Overall Risk Assessment	**Low**		

Mount Beckworth

The land is mostly used for recreational bushwalking and providing wildlife habitat within the Mount Beckworth Scenic Reserve. Small parts of the locality are used for farming purposes.

Special Water Supply catchment: McCallum Creek

Number of Current OWMS: 1

Risk rating explanation: Vast parcels of land reduce the risk of OWMS's impact on the community and environment. Mount Beckworth also has low OWMS density, reducing the risk assessment rating.

Risk Factor – Mount Beckworth	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall	X		
Permit status			X
Overall Risk Assessment	**Low**		

Mount Cameron

Only a small amount of land is in Hepburn Shire; most of Mount Cameron is in Central Goldfields Shire Council. Key features include the Tullaroop Creek and the Merin Merin swamp. The small number of lots within Hepburn Shire are used for mixed farming and grazing.

Special Water Supply Catchment: Tullaroop Reservoir

Number of Current OWMS: 0

Risk rating explanation: The small amount of Mount Cameron located within the Shire is large, which reduces the risk of OWMS impact on the community and environment. Property owners would need to consider the proximity to the Tullaroop Creek and Yellow Creek.

Risk Factor – Mount Cameron	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains		X	
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status	X		
Overall Risk Assessment	**Low**		

Ullina

There is a large amount of land used for mixed farming and grazing. Key OWMS risk factors in Ullina are the proximity to Birch Creek and the high number of groundwater bores.

Special Water Supply Catchments: Tullaroop Reservoir and Cairn Curran

Number of Current OWMS: 1

Risk rating explanation: Vast parcels of land reduce the risk of OWMS impact on the community and environment. The proximity to Lawrence Creek and Birch Creek and the presence of groundwater bores may increase the risk ratings for properties, depending on the location.

Risk Factor - Ullina	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores		X	
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status	X		
Overall Risk Assessment	**Low**		

11.2 Creswick and Surrounding Areas

The Creswick region is where the Victorian volcanic plains and central Victorian uplands bioregion meet. It is one of Hepburn Shire Council's largest townships, and most parts of Creswick are connected to reticulated sewer. For this reason, the surrounding areas of Creswick are the focus of this plan. This region of the Shire features a relatively high proportion of native vegetation, with forest to the east and south of Creswick, and recreation including mountain bike trails at the Creswick Trails and Hammon Park Trailhead and recreational swimming bodies.

This area has fertile volcanic soils and has been extensively cleared for agriculture. Agricultural land use is a mix of dryland cropping and grazing, with some groundwater irrigated areas in potato-growing areas around Smeaton. Minor waterways around Creswick include Slaty Creek, Sawpit Gully (otherwise known as Spring Gully), and Nuggetty Gully. These all flow into Creswick Creek and contribute to flash flooding in Creswick. Two water storages are located upstream of Creswick: St George's Lake and Cosgrave Reservoir.

The effects of flooding are mitigated through the Land Subject to Inundation Overlay (LSIO) over the Creswick Creek, which runs down the spine of the township. Creswick is prone to flooding, with the 2010, 2011 and recent 2022 flooding events resulting in extensive damage to residents, businesses, crops and industry. As detailed in the Sustainable Hepburn Report, the 2022 event, 225 residences were damaged, 55 residents were displaced, a loss of $25 million was incurred to the agricultural sector, and $10 million worth of damage and losses were incurred to the business sector.

Number of Active OWMS

There are 459 OWMS active within localities near the major township of Clunes on the Council's record management system.

Limitations | Challenges | Priorities

- Located in the Loddon River Australian Water Resource Council River basin, with the Birch Creek and Creswick Creek waterways of significance. One Mile Creek and Tourello Creek are also essential waterways
- The Tullaroop Catchment Management Plan seeks to restore the catchment and mitigate flooding risks
- In recent years, there have been a number of new subdivisions in Newlyn and Blampied

11.2.1 Creswick and Surrounding Areas Locality Risk Ratings

Allendale

Located between Creswick and Smeaton, Allendale has recently been developed. The land is mostly used for rural living and lifestyle, mixed farming, and grazing purposes. The landscape is flat, and there has been a recent history of flooding within the locality.

Special Water Supply Catchment: Tullaroop Reservoir

Number of Current OWMS: 37

Risk rating explanation: The median lot sizes are between 0.4 hectares and 1 hectare, increasing the risk rating to medium. Land subject to inundation is also considered a medium risk for the locality.

Risk Factor - Allendale	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains		X	
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status		X	
Overall Risk Assessment	**Medium**		

Bald Hills

Only a small amount of land is located within Hepburn Shire; most of Bald Hills is within Ballarat City Council.

Special Water Supply Catchment: Tullaroop Reservoir

Number of Current OWMS: 0

Risk rating explanation: Very large parcels of land reduce the risk of OWMS impact on the community and environment.

Risk Factor – Bald Hills	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall		X	
Overall Risk Assessment	**Low**		

Bullarook

Only a small amount of land is located within Hepburn Shire, and no OWMS are recorded on the Council's system.

Special Water Supply Catchment: Creswick and Tullaroop Reservoir

Number of Current OWMS: 0

Risk rating explanation: Although a very small area of the Shire, small lot sizes have been identified amongst larger lots. This has impacted the lot size assessment as being medium. Another consideration is the proximity to Dean's Reservoir.

Risk Factor - Bullarook	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall	X		
Permit status			X
Overall Risk Assessment	**Low**		

Blampied

Blampied is mainly used for mixed farming and grazing purposes but has pockets of rural living areas.

Special Water Supply Catchments: Tullaroop Reservoir and Cairn Curran

Number of Current OWMS: 35

Risk rating explanation: Larger lot sizes reduce the OWMS risks. The proximity to floodplains and OWMS density would need to be assessed individually, case by case.

Risk Factor - Blampied	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains		X	
Number of onsite systems in the population centre		X	
Rainfall	X		
Permit status	X		
Overall Risk Assessment	**Low**		

Broomfield

Broomfield is a densely vegetated area, with pockets used for residential rural living and rural lifestyle and mixed farming and grazing zones.

Special Water Supply Catchment: Tullaroop Reservoir

Number of Current OWMS: 27

Risk rating explanation: Small lot sizes have been identified amongst larger lots, which has impacted the lot size assessment as medium.

Risk Factor - Broomfield	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall		X	
Permit status			X
Overall Risk Assessment	**Medium**		

Cabbage tree

Mostly, land is used for recreational bushwalking, camping, and providing wildlife habitat within the Creswick Regional Park.

Special Water Supply Catchment: Tullaroop Reservoir

Number of Current OWMS: 0

Risk rating explanation: The Cabbage tree is used for recreation and wildlife, so there are no existing or foreseen OWMS risks within the scope of this plan.

Risk Factor – Cabbage Tree	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall		X	
Overall Risk Assessment	**Low**		

Creswick

Creswick is prone to flooding, with the 2010, 2011, and recent 2022 flooding events resulting in extensive damage to residents, businesses, crops, and industry. This can impact areas of Creswick that are not connected to the reticulated sewer. Creswick Creek is a waterway of significance, and several significant dams, such as St George Lake and Lake Calembeen, are used as recreational water bodies.

Risk Factor - Creswick	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains		X	
Number of onsite systems in the population centre		X	
Rainfall	X		
Permit status		X	
Overall Risk Assessment	**Medium**		

Special Water Supply Catchments: Creswick and Tullaroop Reservoirs

Number of Current OWMS: 99

Risk rating explanation: This assessment is based on areas not connected to the sewer. The proximity to Creswick Creek, medium lot sizes, proximity to flood plains, and the number of OWMS in the population centre have resulted in a medium risk rating.

Creswick North

Large parcels of land are used for residential, rural living, a rural lifestyle, and mixed farming and grazing.

Special Water Supply Catchments: Creswick and Tullaroop Reservoir

Number of Current OWMS: 6

Risk Factor – Creswick North	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall	X		
Permit status		X	
Overall Risk Assessment	**Low**		

Risk rating explanation: Large parcels of land reduce the risk of OWMS's impact on the community and environment.

Dean

Dean is mainly used for mixed farming and grazing and has pockets of rural living and a rural lifestyle. A number of small waterways pass through Dean, with Birch Creek being the most significant. Proximity to Dean's Reservoir is a significant risk factor identified as the water feeds into the Creswick reticulated water supply (as well as water from the White Swan Reservoir in Invermay).

Risk Factor - Dean	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores		X	
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall	X		
Permit status	X		
Overall Risk Assessment	**Low**		

Special Water Supply Catchments: Tullaroop Reservoir, Creswick

Number of Current OWMS: 9

Risk rating explanation: The risk rating for lot size has reduced the risk rating for dean to low, as properties should be able to manage the risks associated with wastewater. Individual cases closer to Birch Creek or other waterways may be individual assessed as higher risk during the OWMS application process.

Kooroocheang

Large areas of land are used mostly for mixed farming and grazing. McLachlan Creek and Joyce's Creek run through parts of the locality and were considered during the risk assessment.

Risk Factor - Kooroocheang	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall		X	
Overall Risk Assessment	**Low**		

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 7

Risk rating explanation: Large lot sizes reduce the risks associated with onsite wastewater management. Although proximity to waterways has been assessed as low, all applications in Kooroocheang will be evaluated site-specific, and individual properties may be assessed as medium or high risk.

Kingston

A blend of residential rural living, mixed farming, and grazing zones provides land use diversity within Kingston. Pockets of the locality have smaller lots, increasing the risk assessment for lot sizes from medium to large. Birch Creek is a waterway of significance, and a high number of groundwater bores are located to the north of the locality.

Risk Factor - Kingston	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall		X	
Permit status			X
Overall Risk Assessment	High		

Special Water Supply Catchment: Tullaroop Reservoir

Number of Current OWMS: 35

Risk rating explanation: Kingston has been assessed as medium risk due to its proximity to Birch Creek, increased OWMS density, and reduced medium lot sizes.

Mollongghip

Mollongghip borders the Moorabool Shire Council and does not cover a large area within the Shire. Many lots are used mostly for mixed farming and grazing, and small pockets are used for residential rural living and rural lifestyle.

Risk Factor – Mollongghip	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall	X		
Permit status			X
Overall Risk Assessment	**Low**		

Special Water Supply Catchments: Ballarat, Creswick and Tullaroop Reservoir

Number of Current OWMS: 12

Risk rating explanation: Large lots reduce the risks associated with wastewater. All risk factors have been assessed as low risk for Mollongghip, except the number of onsite systems in the population centre, which was assessed as medium due to the residential properties' proximity.

Mount Prospect

Mount Prospect is mainly used for mixed farming, grazing, and residential rural living. Key features include Langdon's Creek and several dams.

Risk Factor – Mount Prospect	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall	X		
Permit status			X
Overall Risk Assessment	**Low**		

Special Water Supply Catchment: Tullaroop Reservoir and Cairn Curran

Number of Current OWMS: 8

Risk rating explanation: Large lot sizes reduce the risks associated with OWMS.

Newlyn

Newlyn is a locality that provides diverse land use, from residential rural living and a rural lifestyle to mixed farming, retail, and small-scale industry. It is also flagged as a growth area with recent subdivisions. Birch Creek traverses the locality and is a significant risk factor when assessing Newlyn. The Newlyn Reservoir is also an important water body.

Risk Factor - Newlyn	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake			X
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall		X	
Permit status			X
Overall Risk Assessment	**Low**		

Special Water Supply Catchment: Creswick and Tullaroop Reservoir

Number of Current OWMS: 25

Risk rating explanation: Large lot sizes reduce the risk to the community and environment. The property's risk rating may vary depending on its proximity to Birch Creek.

Newlyn North

Birch Creek, which runs along the western and southern borders of the locality, is a significant waterway. Newlyn North is a high-population township for its size, and it may be growing. The density of the population, lot size, and proximity to Birch Creek have increased the risk rating to high.

Risk Factor – Newlyn North	Low	Medium	High
Lot size			X
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake			X
Location of groundwater bores	X		
Proximity to flood plains		X	
Number of onsite systems in the population centre		X	
Rainfall		X	
Permit status		X	
Overall Risk Assessment	**High**		

Special Water Supply Catchment: Tullaroop Reservoir

Number of Current OWMS: 72

Risk rating explanation: The proximity to Birch Creek, smaller lot sizes, and the number of OWMS in the population area have raised the risk assessment to high. Depending on their size and location, some individual lots may have a lower risk rating depending on their risk profile.

Smeaton

Smeaton has a mix of residential rural living, rural lifestyle, and mixed farming and grazing. Birch Creek passes through and is a significant waterway.

Risk Factor - Smeaton	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall		X	
Permit status		X	
Overall Risk Assessment:	Medium		

Special Water Supply Catchment: Tullaroop Reservoir and Cairn Curran

Number of Current OWMS: 58

Risk rating explanation: Within the township areas, lot size and number of onsite systems in the population centre have increased the risk assessment to medium.

Smokeytown

Very small locality within the Shire, with very large lots of land.

Risk Factor - Smokeytown	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status		X	
Overall Risk Assessment	**Low**		

Special Water Supply Catchment: Tullaroop Reservoir and Creswick

Number of Current OWMS: 6

Risk rating explanation: Large lot sizes reduce the risks associated with wastewater. In addition, no risks associated with proximity to water source and potable water supply offtake have been identified, resulting in a low-risk rating.

Springmount

Reticulated water is connected to some parts of Springmount towards Creswick. Rural bushland, including St George's Lake, flanks this part of the Shire. The land is mostly residential, with a rural lifestyle, and a public conservation and resource zone.

Risk Factor - Springmount	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall		X	
Permit status		X	
Overall Risk Assessment	**Medium**		

Special Water Supply Catchment: Tullaroop Reservoir and Creswick

Number of Current OWMS: 24

Risk rating explanation: Pockets of Springmount have been assessed as having a medium lot size risk. Risks associated with proximity to water source, potable water supply offtake, and the number of OWMS in the population centre have also been assessed as medium risk.

Sulky

Only a small amount of land is located within Hepburn Shire; most of Sulky is within Ballarat City Council.

Special Water Supply Catchment: Tullaroop Reservoir

Number of Current OWMS: 7

Risk rating explanation: This is a very small locality within the Shire, and all associated risk factors have been identified as low risk.

Risk Factor - Sulky	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status			X
Overall Risk Assessment:	**Low**		

Wattle flat

Locality description: Only a small amount of land is within Hepburn Shire; most of Wattle Flat is within the Moorabool Shire Council. Slaty Creek passes through the locality, and the lots are mainly used for residential, rural or mixed grazing and farming.

Special Water Supply Catchment: Tullaroop Reservoir, Creswick and Ballarat

Number of Current OWMS: 8

Risk rating explanation: This is a very small locality within the Shire, and all associated risk factors have been identified as low risk.

Risk Factor – Wattle flat	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores		X	
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall			X
Overall Risk Assessment	**Low**		

11.3 Daylesford and Surrounding Areas

Mineral springs around Daylesford are a significant tourism drawcard, along with agritourism attractions and fine restaurants for weekenders from Melbourne. Daylesford and the surrounding areas cover dense bushland areas and essential waterways, including mineral springs and private bores. This part of the Shire is notable for the numerous natural mineral springs, some with developed infrastructure, including the Hepburn Springs Reserve with its bathhouse and mineral springs spa resorts set among native bushlands.

Sailors' Creek flows north along the western side of Daylesford, and several small tributaries flow through Daylesford into Sailors Creek. To the east of Hepburn Springs, Spring Creek and the tributaries of Spring Creek, Doctors Gully, and Cobblers Gully divide residential development areas in Hepburn. Spring and Sailors Creek join the Larni Barramul Yaluk, eventually joining the Loddon and Murray Rivers.

Number of Active OWMS

There are 584 OWMS active within localities near the major township of Daylesford on the council's record management system.

Limitations | Challenges | Priorities

- Unsewered parts of Daylesford could pose a risk to groundwater quality, and the protection of mineral springs is a priority of the GMW and NCCMA. OWMS density needs to be considered.
- Population growth and demand for rural residential properties are putting pressure on water resources

11.3.1 Daylesford and Surrounding Areas Risk Ratings

Basalt

A geographically small locality within the Shire that is surrounded by dense bushland. The land use of basalt is primarily a rural lifestyle, with mixed grazing and farming. A key feature of Basalt is Sailors Creek, a significant waterway.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 3

Risk rating explanation: Although proximity to a water source and potable water supply offtake reduces the risks associated with wastewater, the typically large lot sizes throughout Basalt.

Risk Factor - Basalt	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status			X
Overall Risk Assessment	**Low**		

Clydesdale

Clydesdale borders Mount Alexander Shire Council, and its predominant land use is a rural lifestyle with mixed grazing and farming zones. Larni Barramal Yaluk Creek is an important feature of Clydesdale.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 36

Risk Factor - Clydesdale	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains			X
Number of onsite systems in the population centre	X		
Rainfall		X	
		X	
Overall Risk Assessment	**Low**		

Risk rating explanation: Although the locality risk level has been assessed as low, the proximity to the water source and potable water supply offtake has been assessed as medium due to the presence of Larni Barramal Yaluk Creek, a significant waterway. Depending on the location, individual applications may pose a higher risk due to the proximity to Larni Barramal Yaluk Creek.

Coomoora

The land use in Coomoora is predominantly residential and rural, with a relatively high population for a rural township. Wallaby Creek and Leitches Creek flow north of Coomoora. Many groundwater bores are throughout the locality, which has been included in the risk assessment.

Risk Factor - Coomoora	Low	Medium	High
Lot size			X
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores		X	
Proximity to flood plains		X	
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status		X	
Overall Risk Assessment:	**High**		

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 101

Risk rating explanation: Smaller lot sizes increase the risks due to the lack of land to contain wastewater after treatment, or if there is a system failure. In addition, the proximity to groundwater bores has been assessed as medium, as has the number of OWMS in the population centre.

Daylesford

Daylesford is supplied with reticulated water via the Wombat and Bullarto Reservoirs, with only areas on the outskirts of the township that do not have a sewer connection—large water bodies, including the popular Lake Daylesford and Jubilee Lake.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 102

Risk rating explanation: The key considerations include the ability for landowners to meet setback requirements when there are smaller lot sizes. Rainfall has also been assessed as high and is a significant risk factor.

Risk Factor - Daylesford	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores		X	
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status		X	
Overall Risk Assessment	**High**		

Dry Diggings

A densely vegetated locality within the Shire, Dry Diggins is mainly used for residential and mixed farming and grazing purposes. It has been identified that many groundwater bores are in use within the locality, and this has been included in the risk assessment.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 10

Risk rating explanation: Large lots reduce the risks associated with wastewater, which can manage the proximity to groundwater bores.

Risk Factor – Dry diggings	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores		X	
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status		X	
Overall Risk Assessment	**Low**		

Eganstown

Eganstown is used for residential and rural lifestyles and pockets of mixed farming. Corinella Creek and McLachlan Creek are the main waterways throughout the locality.

Special Water Supply Catchments: Cairn Curran and Tullaroop Reservoir

Number of Current OWMS: 68

Risk rating explanation: The risks associated with smaller lots and the number of OWMS have increased the risk rating to medium.

Risk Factor - Eganstown	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains		X	
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status		X	
Overall Risk Assessment	**High**		

Elevated Plains

Elevated plains are mainly used for residential and rural lifestyles, mixed farming, and grazing. Parts of the locality are near Larni Barramal Yaluk Creek, Dry Diggins Creek, and Jews Gully, and these have been considered in the risk assessment.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 22

Risk Factor – Elevated plains	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall		X	
Permit status		X	
Overall Risk Assessment	**Low**		

Risk rating explanation: The risks associated with smaller lots, the number of OWMS, proximity to water sources, and potable water supply offtake have increased the risk rating to a high level.

Franklinford

The Larni Barramal Yaluk Creek is a key risk factor within Franklinford. The land use is primarily for farming and grazing, and there is a small pocket of dense residential rural lifestyle properties.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 13

Risk Factor - Franklinford	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall		X	
Permit status			X
Overall Risk Assessment	**Low**		

Risk rating explanation: The presence of Larni Barramal Yaluk Creek has been considered medium risk due to the significant distance between most of the residential areas.

Guildford

Guildford's main township is in Mount Alexander Shire. Most of the land within Hepburn Shire is used for mixed farming, grazing, and a small amount of residential rural living.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 7

Risk rating explanation: Large lots of land reduce the wastewater risks to the community and environment.

Risk Factor - Guildford	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status			X
Overall Risk Assessment	**Low**		

Hepburn

Mainly a sewered area, but the Council is aware that there would be OWMS installed before the requirements for OWMS applications. This may also result in new applications for system failures or replacement.

Larni Barramal, Yaluk Creek, and Sailors Creek are significant waterways. To the north of the locality, Larni Barramal Yaluk Creek breaks off into Sailors Creek, which moves south down the western side of the locality. Spring Creek moves through the centre of the locality heading south towards Daylesford.

Risk Factor - Hepburn	Low	Medium	High
Lot size			X
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores		X	
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall	X		
Permit status			X
Overall Risk Assessment	**High**		

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 19

Risk rating explanation: Smaller lot sizes within Hepburn can create challenges for landowners in ensuring wastewater is contained within the property, and has been assessed as high. Further, rainfall has also been estimated to be a significant risk factor. The presence of groundwater bores is a considerable risk factor that will be evaluated on a case-by-case basis.

Hepburn Springs

Mainly a sewered area, but the Council is aware that there would be OWMS installed before the requirements for OWMS applications. This may also result in new applications for system failures or replacement.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 1

Risk rating explanation: The key considerations include the ability for landowners to meet setback requirements when there are smaller lot sizes. Rainfall has also been assessed as high and is a significant risk factor, as is permit status.

Risk Factor – Hepburn Springs	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores		X	
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Number of accommodation and commercial sites	*Not assessed*		
Rainfall			X
Permit status		X	
Overall Risk Assessment	**High**		

Langdons Hill

The land in Langdon's Hill is used mainly for mixed farming and grazing.

Special Water Supply Catchments: Tullaroop Reservoir

Number of Current OWMS: 9

Risk rating explanation: All risk factors have been assessed as low risk, except for rainfall and permit status.

Risk Factor – Langdons Hill	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status			X
Overall Risk Assessment	**Low**		

Leonards Hill

Leonards Hill is mostly for mixed farming and grazing. Sailors Creek runs through parts of the locality.

Special Water Supply Catchments: Tullaroop Reservoir, Moorabool River (Sheoaks), Cairn Curran and Pykes Creek Reservoir and Werribee River.

Number of Current OWMS: 6

Risk rating explanation: The council has considered this locality low, as Sailors Creek only flows through dense bushland, with no OWMS implications.

Risk Factor – Leonards Hill	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall			X
Permit status			X
Overall Risk Assessment	**Low**		

Mount Franklin

Mount Franklin is filled with large tracts of land used mainly for mixed farming and grazing. Tarilta Creek runs through parts of the locality, and many dams are dotted through private properties. Several groundwater bores have been identified; however, they are located centrally within the Lalgambuk (Mt Franklin) Camping area.

Risk Factor – Mount Franklin	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains		X	
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status		X	
Overall Risk Assessment	**Low**		

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 18

Risk rating explanation: All risk factors were assessed as low, except for the number of OWMS in the population centre. However, this risk can be managed due to the large land sizes.

Musk Vale

Musk Vale is flanked by dense bushland in all directions, providing a space primarily for rural living and lifestyle. Sailors Creek is a significant waterway that passes on the western side of the locality.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 37

Risk rating explanation: The medium lot size risk factor has been assessed as medium, with areas of Musk Vale having smaller properties, increasing the associated wastewater risks.

Risk Factor – Musk Vale	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake			X
Location of groundwater bores		X	
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status			X
Overall Risk Assessment	**High**		

Rocklyn

A geographically small locality within the Shire with smaller lots within the central township area that spread out into the farming and grazing properties. Although no waterways of significance go through Rocklyn, several small creeks and dams have been considered during the risk assessment.

Risk Factor - Rocklyn	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall			X
Permit status		X	
Overall Risk Assessment	**High**		

Special Water Supply Catchments: Tullaroop Reservoir

Number of Current OWMS: 12

Risk rating explanation: The council has considered this locality medium due to smaller lot sizes and the number of creeks and dams.

Sailors Falls

Almost half of Sailors Falls is dense bushland that has not been considered in the risk assessment due to being on crown land. Sailors Creek is a significant waterway near the township's densely populated area. These factors increase the risk assessment rating.

Risk Factor – Sailors Falls	Low	Medium	High
Lot size			X
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake			X
Location of groundwater bores	X		
Proximity to flood plains		X	
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status			X
Overall Risk Rating:	**High**		

Special Water Supply Catchments: Tullaroop Reservoir

Number of Current OWMS: 21

Risk rating explanation: The lot size risk factor has been assessed as high risk, due to the smaller lots within a proximity increasing the risk of OWMS density. Also, the proximity to Sailors Creek is considered high risk.

Sailors Hill

Sailors Creek is a waterway of significance to the west of Sailors Hill; however, it is acknowledged that densely vegetated crown land provides adequate setback for most of the locality. Sailors Hill has large lots, which also reduces the risk assessment rating.

Risk Factor – Sailors Hill	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status			X
Overall Risk Rating:	**Low**		

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 20

Risk rating explanation: Large lot sizes reduce the risks associated with wastewater to the health of the community and environment.

Shepherds Flat

Shepherds Flat is a geographically large locality within the Shire; however, most of the land is crown land and densely vegetated. All other areas are used for residential rural living, farming, and grazing. The lots within Shepherds Flat vary, from vast farming land to smaller residential areas. These factors, as well as the proximity to Larni Barramal Yaluk Creek, are the most significant risk factors.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 29

Risk rating explanation: Smaller lots used for recreation and rural living increase the risk rating. Importantly, many of these lots are within close proximity to significant waterways, which has raised the risk assessment to high.

Risk Factor – Shepherds Flat	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		X
Location of groundwater bores	X		
Proximity to flood plains			
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status			X
Overall Risk Assessment	**High**		

Strangways

Only a small amount of land is located within Hepburn Shire; most Strangways is within Mount Alexander Shire Council. Larni Barramal Yaluk Creek is a significant waterway and an important consideration when assessing wastewater risks within Strangways.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 1

Risk rating explanation: The risk rating has been assessed as low due to the large lot sizes, which will increase the likelihood of wastewater being contained and effectively managed within the property boundary. It is important to note that individual applications or existing OWMS may be considered high risk depending on their proximity to the Larni Barramal Yaluk Creek.

Risk Factor - Strangways	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		X
Location of groundwater bores	X		
Proximity to flood plains		X	
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status			X
Overall Risk Assessment	**Low**		

Tarilta

A very small locality within the Shire that is shared with Mount Alexander Shire. It is important to note that there are no recorded active OWMS on the Hepburn Shire Council record management system.

Special Water Supply Catchments:

Number of Current OWMS: 0

Risk rating explanation: All risk factors have been assessed as low due to large lot sizes and no significant waterways within Tarilta.

Risk Factor - Tarilta	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Number of onsite systems in the population centre	X		
Permit status			X
Overall Risk Rating	**Low**		

Werona

Only a small amount of land is in Hepburn Shire; most of Werona is in Mount Alexander Shire. Werona is a densely vegetated landscape, with the Werona Basin and American Gully nearby.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 3

Risk rating explanation: Very large parcels of land reduce the risk of OWMS impact on the community and environment. However, the proximity to the Weona Basin, McLachlan Creek, and other unknown waterways may increase the risk for individual applications depending on their location.

Risk Factor - Werona	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Number of onsite systems in the population centre	X		
Permit status			X
Overall Risk Assessment	**Low**		

Yandoit

The township of Yandoit has many medium-sized lots, which may increase associated wastewater risks, such as OWMS density in the population centre. The Larni Barramal Yaluk Creek flanks Yandoit to the east of the facility, but it is 600 meters and 1 kilometre from the main town centre.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 67

Risk rating explanation: Lot sizes are Yandoit's primary wastewater consideration. It is acknowledged that individual lots or applications may be assessed as high, depending on the proximity to Larni Barramal Yaluk Creek.

Risk Factor - Yandoit	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status		X	
Overall Risk Assessment	**Medium**		

11.4 Glenlyon and Surrounding Areas

From a wastewater perspective, Glenlyon and the surrounding area are the highest priority within the Shire due to OWMS density and proximity to groundwater bores. Any potential growth for Glenlyon and surrounding townships will be heavily scrutinised to ensure OWMS risks are managed. This includes restricting subdivision to a 4,000 sqm minimum lot size. It is noted that smaller dwellings can have less effect in comparison, but their size and cumulative impact are also significant factors needing consideration.

As detailed in the Future Hepburn Structural Plan for Glenlyon, managing the impacts of development on the Loddon River and the area's substantial groundwater reserves is a critical environmental consideration for the structure plan. As Glenlyon has no sewer connection, the reliance on OWMS means that groundwater is at risk if systems are not regularly serviced.

Number of Active OWMS

On the Council's record management system, there are 539 OWMS active within localities near the major township of Glenlyon.

Limitations | Challenges | Priorities

- OWMS density and setbacks to bores are a key challenge and priority.
- Australian Water Resources Council River Basins – Campaspe River, Loddon River.
- Glenlyon has no existing sewer or drinking water connections, and none are planned.
- As detailed in the Future Hepburn, there is a need to map and identify mineral springs to protect them from sewerage contamination.
- The floodplain management authority has concerns about the number of OWMS in use within the township, considering the importance of groundwater health.
- Population growth and demand for rural residential properties are putting pressure on water resources, including bores.

11.4.1 Glenlyon and Surrounding Areas Risk Ratings

Denver

Denver is mainly used for residential and rural lifestyles, as well as mixed farming and grazing purposes, and it has many active OWMS for small townships. The important features of Denver include dense bushland on the east and western boundaries and the presence of Kangaroo Creek, Dyers Creek, and Back Creek.

Special Water Supply Catchments: Cairn Curran and Eppalock

Number of Current OWMS: 55

Risk rating explanation: Denver's smaller lots used for recreation and rural living increase the wastewater risk rating. Further, the close proximity to waterways throughout the locality and increased OWMS in the population centre have been assessed as medium risk.

Risk Factor - Denver	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall			X
Permit status			X
Overall Risk Assessment	**High**		

Drummond

The Drummond township is surrounded by larger lots of land used for mixed grazing and farming.

Special Water Supply Catchments: Cairn Curran and Eppalock

Number of Current OWMS: 70

Risk rating explanation: The lot sizes within the township area have increased the risk level to medium risk. It is important to note that the proximity to water source and potable water supply offtake and the number of onsite systems in the population centre have also been assessed as medium risk.

Risk Factor – Drummond	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores		X	
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall		X	
Permit status		X	
Overall Risk Assessment	**Medium**		

Drummond North

Parts of Drummond North are close to the Coliban River and Kangaroo Creek. The land is typically used for residential and rural lifestyles and mixed farming and grazing.

Special Water Supply Catchments: Cairn Curran and Eppalock

Number of Current OWMS: 32

Risk rating explanation: Larger lots reduce the risks associated with wastewater. Also, it is noted that required setbacks to manage the associated risks can be achieved between properties and the Coliban River. Accordingly, this individual risk factor has been assessed as medium.

Risk Factor – Drummond North	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores		X	
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall		X	
Permit status			X
Overall Risk Assessment	**High**		

Glenlyon

Glenlyon is one of the highest risk localities within the Shire due to:

- small lot sizes based on our risk assessment framework
- the close proximity to significant waterways, including the Loddon River
- ground water bores, and the known use of bores for potable water
- OWMS density

Risk Factor – Glenlyon	Low	Medium	High
Lot size			X
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake			X
Location of groundwater bores			X
Proximity to flood plains		X	
Number of onsite systems in the population centre			X
Rainfall			X
Permit status		X	
Overall Risk Rating:	**High**		

Special Water Supply Catchments:
Cairn Curran and Eppalock

Number of Current OWMS: 205

Risk rating explanation: Glenlyon has been assessed as high based on the factors detailed above as having a high-risk rating.

"Managing the impacts of development on the Loddon River and the area's substantial ground water reserves is a critical environmental consideration for the structure plan."
- Future Hepburn – Glenlyon Structure Plan

Porcupine Ridge

Porcupine Ridge is densely vegetated to the south of the locality and space to the north. Lot sizes are large, and Kangaroo Creek traverses the eastern side of the locality from north to south.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 31

Risk rating explanation: Waterbodies (dams and creeks) are the main risk factor when assessing Porcupine Ridge. The lot sizes within the locality have been assessed as low risk, which will assist in managing the other risk factors assessed. Property owners must be aware that their property risks may be higher depending on their proximity to water bodies.

Risk Factor – Porcupine Ridge	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Number of accommodation and commercial sites			
Rainfall		X	
Permit status			X
Overall Risk Rating:	**Low**		

Taradale

A very small locality within the Shire that is shared with Mount Alexander Shire. It is important to note that there are no recorded active OWMS on the Hepburn Shire Council record management system.

Special Water Supply Catchments: Mostly the Eppalock catchment

Number of Current OWMS: 0

Risk Factor - Taradale	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Number of onsite systems in the population centre	X		
Permit status			X
Overall Risk Rating:	**Low**		

Risk rating explanation: Large lots of land reduce the risks associated with wastewater on the community's health and environment.

Wheatsheaf

Locality description: Coomoora's land use is predominantly residential and rural, and it has a high population for a rural township.

Special Water Supply Catchments: Cairn Curran and Eppalock

Number of Current OWMS: 126

Risk Factor – Wheatsheaf	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores			X
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status	X		
Overall Risk Assessment	**Low**		

Risk rating explanation: Kangaroo Creek flows through the centre of Wheatsheaf and is a waterway of significance. It is acknowledged that the lots are large, and therefore, the associated risks are reduced to medium. Another associated risk factor that has been assessed as medium risk is the number of OWMS in the population centre due to the cumulative risks of having a large number of OWMS in a relatively small area, which increases the chances of ground contamination.

11.5 Trentham and Surrounding Area

Popular for the natural landscape, Trentham and the surrounding areas are surrounded by rich volcanic soil and experience high rainfall compared to other parts of the Shire. Most of the main township area of Trentham is sewered. However, the unsewered areas pose a risk to groundwater quality due to drinking water being supplied from groundwater. Caliban Water has 2 bores to the east of Trentham and 2 reservoirs at the Trentham treatment plant, where the groundwater is treated.

Due to the area's popularity, housing has increased, with 130 new dwellings being constructed in Trentham alone during 2016 – 2021. Many properties are used for short-term accommodation, which does have OWMS implications, as many systems require regular and consistent use.

Number of Active OWMS

On the council's record management system, there are 439 OWMS active within localities near the major township of Trentham.

Limitations |Challenges | Priorities

- The township of Trentham's drinking water is from groundwater, so OWMS density and risks are elevated.
- Advanced Water Recycling Centre River basins (Loddon River, Werribee River)
- High rainfall.
- Population growth and demand for rural residential properties are putting pressure on water resources.
- Short-term accommodation has increased in the area, and property owners must be aware of their system-specific use and maintenance requirements.

11.5.1 Trentham and Surrounding Areas Locality Risk Ratings

Bullarto

Bullarto is surrounded by dense bushland, and is mostly used for farming and grazing, with a small township being used for residential rural living. Kangaroo Creek is the main feature of the locality, and smaller lot sizes within the township area are reflected in the risk rating. The Bullarto Reservoir contributes to the water supply of Daylesford and is a critical feature of the locality.

Special Water Supply Catchments: Cairn Curran and Pykes Creek Reservoir and Werribee River

Number of Current OWMS: 27

Risk rating explanation: Kangaroo Creek runs through Bullarto, and the Loddon River is close to the east, which results in the proximity to water sources and potable water supply offtake being high. Most importantly, the Bullarto Reservoir is a critical water body

Risk Factor - Bullarto	Low	Medium	High
Lot size			X
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake			X
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status		X	
Overall Risk Assessment	**High**		

within the Shire; however, it is a long distance from any OWMS. In addition to this, and smaller lots being identified, the risk rating for Bullarto is high.

Bullarto South

Reduced proximity to Kangaroo Creek across the locality has seen the risk rating for Bullarto South lower than Bullarto. Bullarto South is mostly for farming and grazing purposes; however, a number of properties have small land sizes, which has elevated the risk rating.

Special Water Supply Catchments: Pykes Creek Reservoir and Werribee River, Lake Merrimu and Eppalock

Number of Current OWMS: 8

Risk rating explanation: The lot size has been assessed as medium, however due to high average rainfall the locality has been assessed as high. Waterways are also an essential risk factor assessed. And depending property proximity, may be assessed higher or lower depending on individual characteristics.

Risk Factor – Bullarto South	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores	X		
Proximity to flood plains		X	
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status		X	
Overall Risk Assessment	**High**		

Fern Hill

Located in the eastern corner of the Shire, Fern Hills features include large lots of farmlands, key water ways including the little Coliban River and Jones Creek.

Special Water Supply Catchments: Eppalock

Number of Current OWMS: 13

Risk rating explanation: Large amounts of land reduce the risks associated with wastewater to the health of the community and environment.

Risk Factor – Fern Hill	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		X
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains			X
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status			X
Overall Risk Assessment	**Low**		

Little Hampton

Locality description: Little Hampton is close to the Loddon River to the west and has the Coliban River passing through the southern parts of the locality. It is filled with large amounts of land, used chiefly for mixed farming and grazing, and the associated risks have been assessed as low.

Special Water Supply Catchments: Cairn Curran and Eppalock

Number of Current OWMS: 26

Risk rating explanation: Large amounts of land reduce the risks associated with wastewater to the health of the community

Risk Factor – Little Hampton	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status	X		
Overall Risk Assessment	**Low**		

and environment. Properties near important waterways may be assessed as being at a higher risk on a case-by-case basis.

Lyonville

Lyonville is one of the highest risk localities within the Shire due to:

- small lot sizes based on our risk assessment framework
- the proximity to significant waterways, including the Loddon River and Coliban River
- ground water bores, and known use of using bores for potable water
- OWMS density

Special Water Supply Catchments: Cairn Curran, Lake Merrimu (Lerderderg River) and Eppalock

Number of Current OWMS: 82

Risk rating explanation: Due to the risk factors detailed above, Lyonville is assessed as high risk.

Risk Factor - Lyonville	Low	Medium	High
Lot size			X
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores			X
Proximity to flood plains		X	
Number of onsite systems in the population centre			X
Rainfall			X
Permit status		X	
Overall Risk Rating:	**High**		

Musk

A small pocket of the shire with large lots reduces the risk rating. Leitches Creek and Wallaby Creek is located within the area.

Special Water Supply Catchments: Cairn Curran

Number of Current OWMS: 68

Risk rating explanation: Large lot sizes reduce the risks associated with wastewater on the community's health and the environment.

Risk Factor - Musk	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores		X	
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status	X		
Overall Risk Assessment	**High**		

Newbury

Located in the southeastern end of the Shire, Newbury is a small township surrounded by farming and grazing land, which leads to dense bushland in all directions.

Special Water Supply Catchments: Eppalock and Lake Merrimu (Lerderderg River)

Number of Current OWMS: 20

Risk rating explanation: A number of small lot sizes have increased the locality risk rating to medium. Many properties are within close proximity to waterways, and individual lots may be considered a higher risk on a case-by-case basis.

Risk Factor - Newbury	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status	X		
Overall Risk Assessment	**High**		

North Blackwood

North Blackwood borders Macedon Ranges to the east, and Moorabool Shire to the south and is surrounded by dense bushland. The land within our shire are mostly residential and rural living and mixed grazing and farming. The lots are large; however, dams and creeks do run through the locality, including Stockyard Creek and Clear Water Creek.

Risk Factor – North Blackwood	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall			X
Permit status			X
Overall Risk Assessment	**Low**		

Special Water Supply Catchments: Eppalock and Lake Merrimu (Lerderderg River).

Number of Current OWMS: 8

Risk rating explanation: Large lot sizes reduce the risks associated with wastewater.

Spring Hill

Spring Hill borders with Macedon Ranges Shire Council, and the land is mostly used for mixed farming and grazing, and residential rural lifestyle.

Risk Factor – Spring Hill	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre		X	
Rainfall		X	
Permit status			X
Overall Risk Assessment	**Low**		

Special Water Supply Catchments: Eppalock

Number of Current OWMS: 20

Risk rating explanation: Large lot sizes reduce the risks associated with wastewater.

Trentham

Trentham has been increasingly popular for housing with 130 new dwellings being constructed from 2016- 2021. The high-density developments increase the risk rating. The Coliban River passes through Trentham and is a waterway of significance.

Special Water Supply Catchments: Eppalock and Lake Merrimu (Lerderderg River)

Number of Current OWMS: 113

Risk Factor - Trentham	Low	Medium	High
Lot size			X
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake			X
Location of groundwater bores			X
Proximity to flood plains			X
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status		X	
Overall Risk Assessment	**High**		

Risk rating explanation: Trentham has been assessed as risk in the following criteria, leading it to be one of the priority areas for Council to manage:

- Lot size
- Proximity to water source and potable water supply offtake
- Location of groundwater bores

- Rainfall

Strategies: Protect and enhance the waterways of Stony Creek, Trent Creek and the Coliban River.

Trentham East

Trentham East is predominantly used for mixed farming and grazing, resulting in large lot sizes, reducing the risk rating. Little Coliban Creek traverses some parts of Trentham East, which is a waterway of significance.

Special Water Supply Catchments: Eppalock and Lake Merrimu (Lerderderg River)

Number of Current OWMS: 27

Risk rating explanation: Large lot sizes reduce the risks associated with wastewater.

Risk Factor – Trentham East	Low	Medium	High
Lot size		X	
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores		X	
Proximity to flood plains			
Number of onsite systems in the population centre		X	
Rainfall			X
Permit status		X	
Overall Risk Assessment	**High**		

Tylden

Only a small amount of land is located within Hepburn Shire; the majority of Tylden is within Macedon Ranges Shire Council. The Coliban River passes through Tylden and is a significant waterway.

Special Water Supply Catchments: Eppalock

Number of Current OWMS: 5

Risk rating explanation: Although the only a small part of Tylden is located with Hepburn Shire, due to the proximity of the Coliban River, the rating is assessed as medium. Individual lots may be assessed as higher risk depending on the proximity to the Coliban River and other risk factors.

Risk Factor - Tylden	Low	Medium	High
Lot size	X		
Topography	X		
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake		X	
Location of groundwater bores		X	
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall		X	
Permit status	X		
Overall Risk Assessment	**Low**		

Tylden South

Tylden South is a small locality within the Shire with no current OWMS on Council's systems. The Coliban River passes through Tylden South and is a significant waterway.

Special Water Supply Catchments: Eppalock

Number of Current OWMS: 0

Risk rating explanation: Although only a small part of Tylden South is located within Hepburn Shire, due to the proximity of the Coliban River, the rating is assessed as medium. Individual lots may be assessed as higher risk depending on the proximity to the Coliban River and other risk factors.

Risk Factor – Tylden South	Low	Medium	High
Lot size	X		
Topography		X	
Soil type	X		
Groundwater depth and quality	X		
Proximity to water source and potable water supply offtake	X		
Location of groundwater bores	X		
Proximity to flood plains	X		
Number of onsite systems in the population centre	X		
Rainfall			X
Permit status		X	
Overall Risk Assessment	**Low**		

12. Land Capability Assessments

Due to the Shire's location within special water supply catchments, submitting a Land Capability Assessment (LCA) is a mandatory requirement at the Planning stage for any new dwelling or subdivision. An LCA assists applicants, Councils, and Water Authorities by providing specific and relevant information about the property's ability to contain wastewater.

The table below provides the expected information to be provided within an LCA.

LCA Topics	Examples
Background and proposal details	• overview of the proposal • limitations and assumptions
Land features	• topography and drainage • soil characteristics, soil permeability and vegetation across the site. With a focus on the land capability areas • average rainfall and flooding potential • catchment area • bores, dams and groundwater • building envelope • erosion potential • local context and aspect of the site
Site information	• property location • property title • zoning and overlays • land use (past and present) • use of surrounding areas
Infrastructure	• available services
Land capability	• land constraints • soil percolation • risk rating and summary • management protocols

Recommendations	• recommended OWMS • OWMS design and specifications • disposal fields and reserve area allocations
Management and maintenance	Ongoing management, maintenance, reporting and other requirements
Supporting data and mapping	• accurate mapping • supporting soil classification test data

Table 13 Land Capability Assessment Topics and Examples

13. Compliance Monitoring and Audits

All OWMS have a lifespan, and in time, systems will become less effective in controlling the risks associated with wastewater management systems. Although it is the responsibility of all property owners to ensure that their OWMS are working effectively, Hepburn Shire Council has an important role to play in ensuring that these risks are managed, such as:

- educating the community and people responsible for an OWMS about good management practices
- investigating community complaints relating to alleged system failures, such as wastewater discharges or odour, and when these occur, ensuring compliance is achieved
- assessing applications and land capability assessments before and during installation

13.1 Council Compliance Monitoring Program

Council has developed an audit schedule to assess the compliance of active systems. This audit schedule will prioritise high-risk localities and at-risk property-based risks such as high OWMS density or proximity to potable water sources. The audit program is intended to provide meaningful data on the compliance of OWMS in use within the Shire and provide opportunities for compliance to be achieved should non-compliance be identified.

Year	Focus
2025 &2026	Legacy systems—audit properties not connected to sewer; however, the Council has no record of an onsite wastewater management system. Method: • Desktop assessment • Mail out • Onsite audits The objective of this audit program is to identify any failing systems and gain compliance. In the process, the Council will gain a better understanding of the types of systems in use and update the GIS mapping system.

2027	Growth areas – audit onsite wastewater management systems in Glenlyon, Newlyn and Newlyn North to understand any environmental risks due to development density. This will include water testing of waterways and bores.
2028	Treatment standards – audit secondary and advanced secondary treatment systems to confirm the required level of treatment is being achieved. The audit will focus on getting different onsite wastewater treatment models and methods.
2029	Audit of properties within 100 meters of a waterway.

Table 14 Council Compliance Monitoring Program

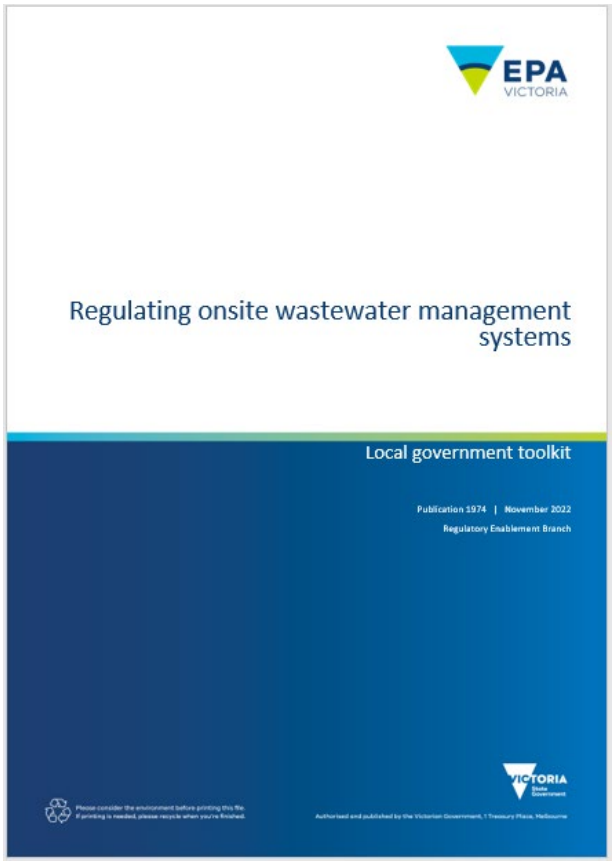
It is essential to highlight that Council employees with authorisation under Section 242(2) of the Environment Protection Act 2017 have the power of entry at residential premises when:

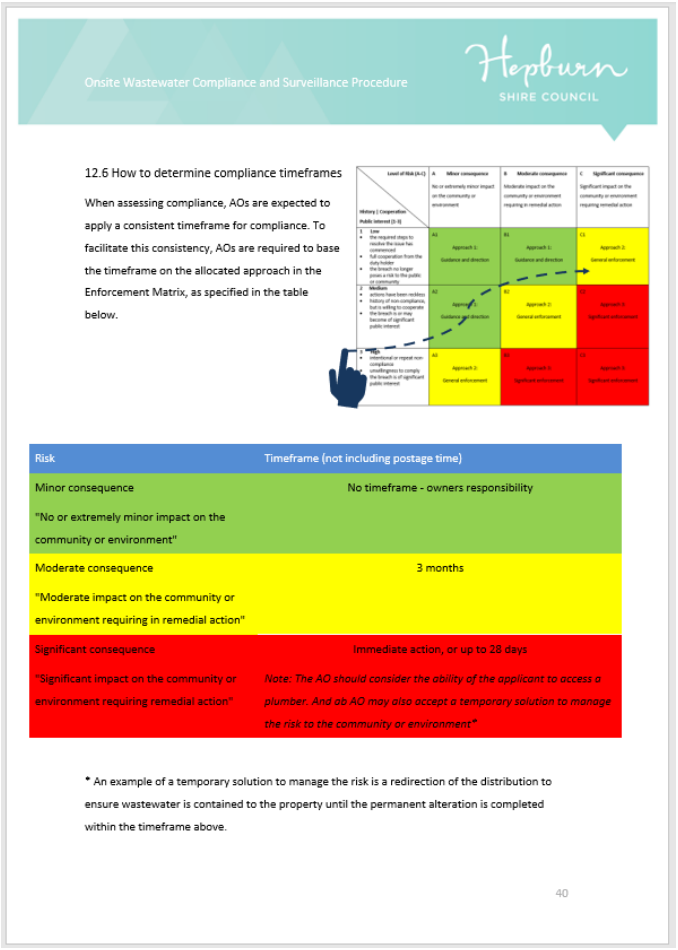
- there is consent of the occupier
- if the authorised officer reasonably believes that a person has contravened, is contravening or is about to contravene a provision of the Act or Registrations
- if the authorised officer reasonably believes there is an immediate risk of material harm to human health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

"Monitoring of property owners to meet the GED is a key component of the Environment Protection Act 2017 and EP Regulations 2021". - Coliban Water, 2021.

13.2 Our approach to compliance and education

Hepburn Shire Council is committed to fair and consistent regulation. To achieve this commitment, the Council has developed policy and procedures that align with EPA guidance.





Strategy 3—***Our authorised officers will have the required skills and knowledge to make decisions fairly, consistently, and proportionately*** **to risk.**

Action	Description	Outcomes	Timeframe
3.1	Annual review Councils Onsite Wastewater Management Compliance and Enforcement Procedure.	• a review of Council procedure will ensure the procedure remains relevant to practice, and is amended when required, such as a change to legislation or Council approach. • reviewing compliance decisions, and ensuring these decisions are consistent with the relevant procedures.	Annual
3.2	Confirmation that AOs have completed any relevant training relating the regulation of OWMS, such as: • Training provided by the EPA • Land Capability Assessment training • Any other training opportunities that arise This will be reviewed at the relevant AOs annual performance development plan review.	Having all authorised officers attend the training and apply the learnings	Bi-annual by Authorised Officers (AU) professional development plan
3.4	Include this plan to new authorised officers during their council induction.	Allowing new staff to be aware of the plan, and how to implement the plan.	As required
3.5	Conduct a review of the standard Planning Referral Conditions	Create efficiencies via a standard approach to providing wastewater conditions	December 2025

Table 15 Onsite Wastewater Management Strategy 3

14. Existing OWMS in Sewered Areas

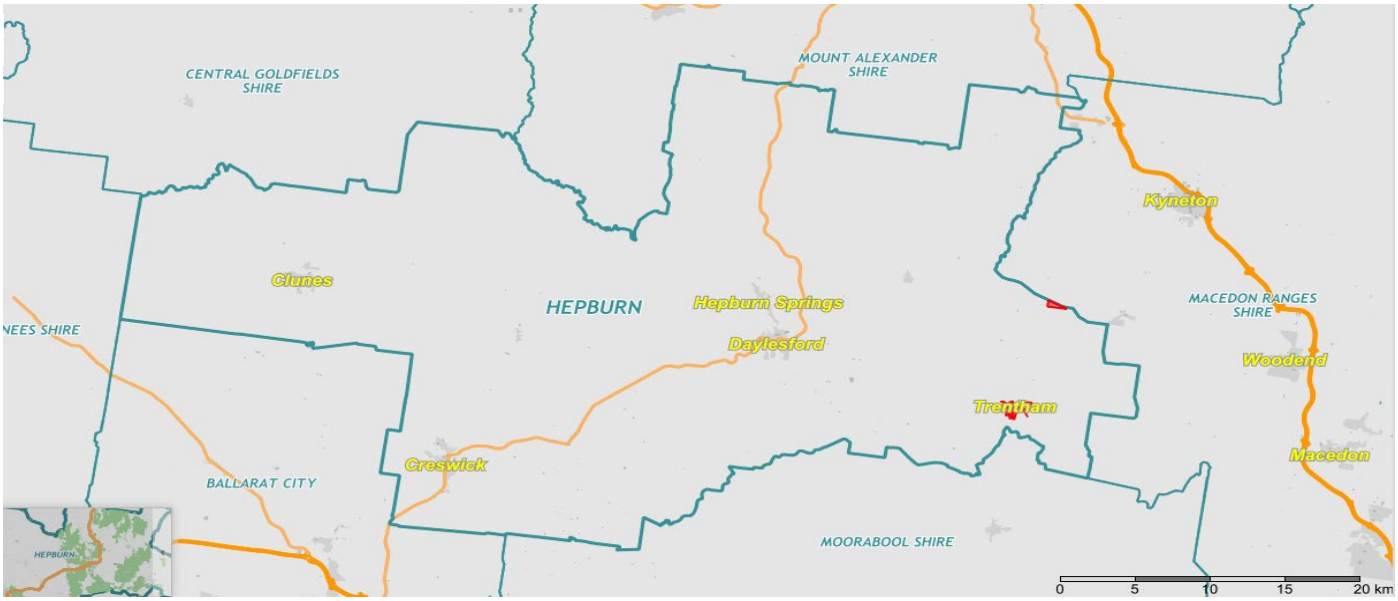
For properties within the Shire that have an existing OWMS Hepburn Shire Councils approach is that properties owners will not be required to connect to sewer unless:

- OWMS system failure, where the risks associated with the OWMS as detailed in the GED obligations are not met
- A subdivision takes place

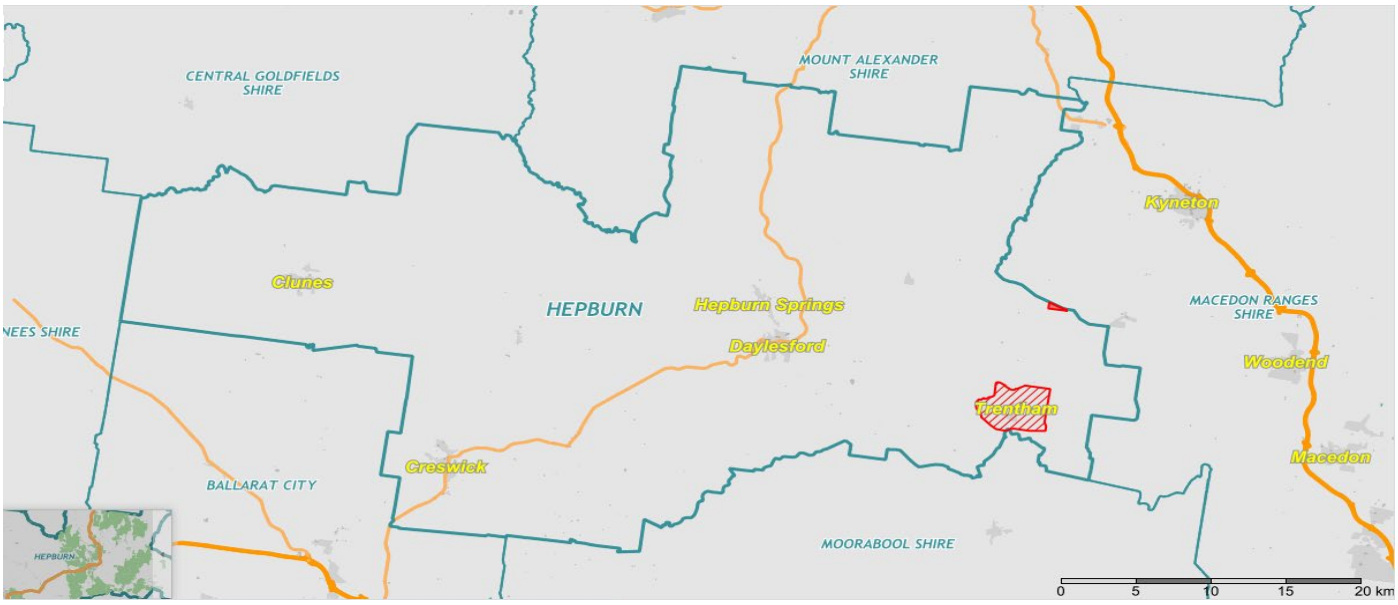
In the circumstances of subdivisions, all lots, including the existing property must connect to reticulated sewer.

15. Appendix 1 Hepburn Shire Council Wastewater Context Maps

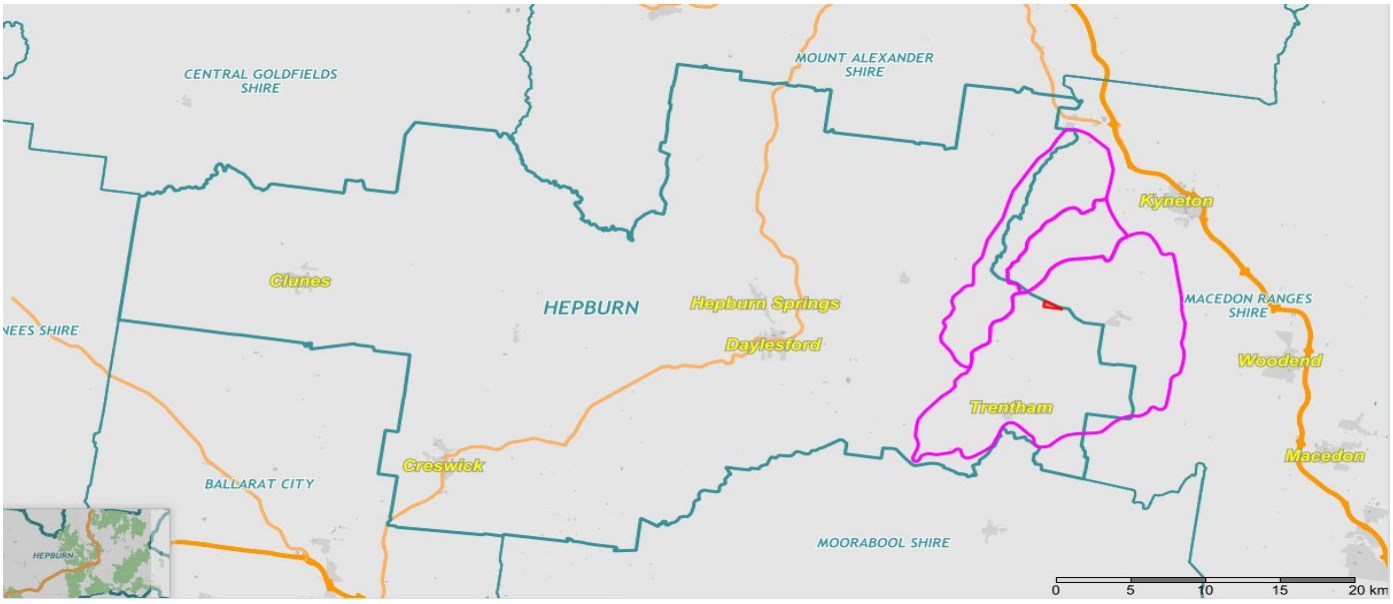
Coliban Water Sewer Mains



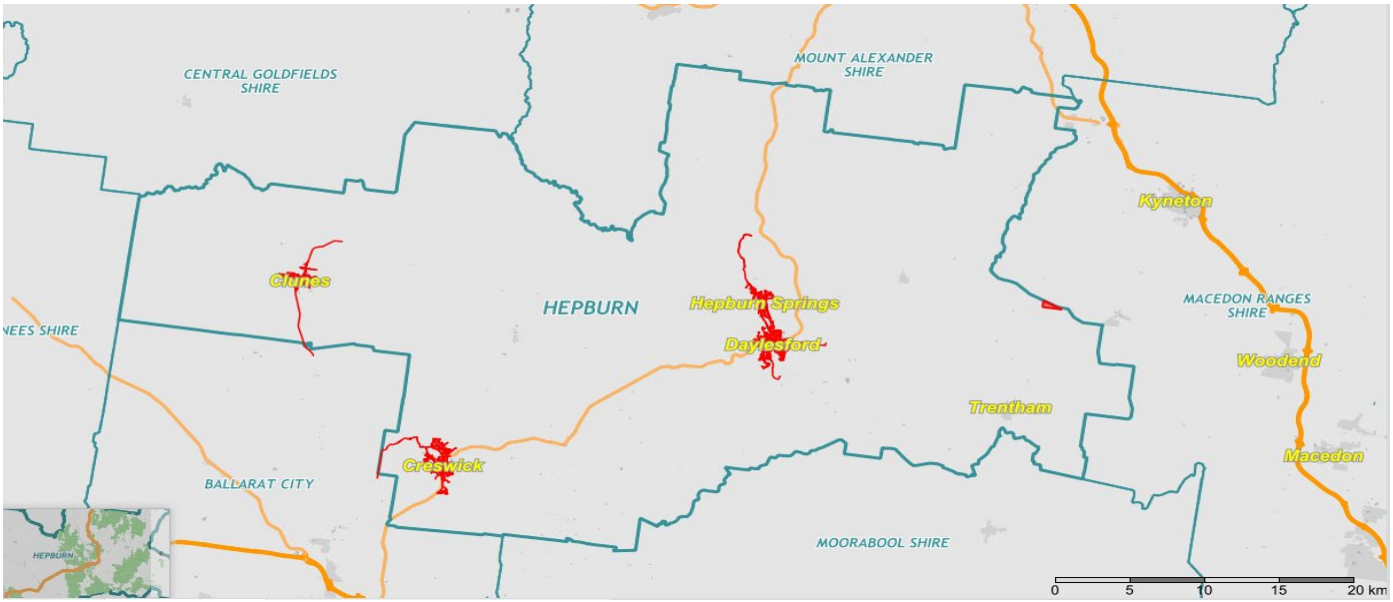
Coliban Water Sewer District



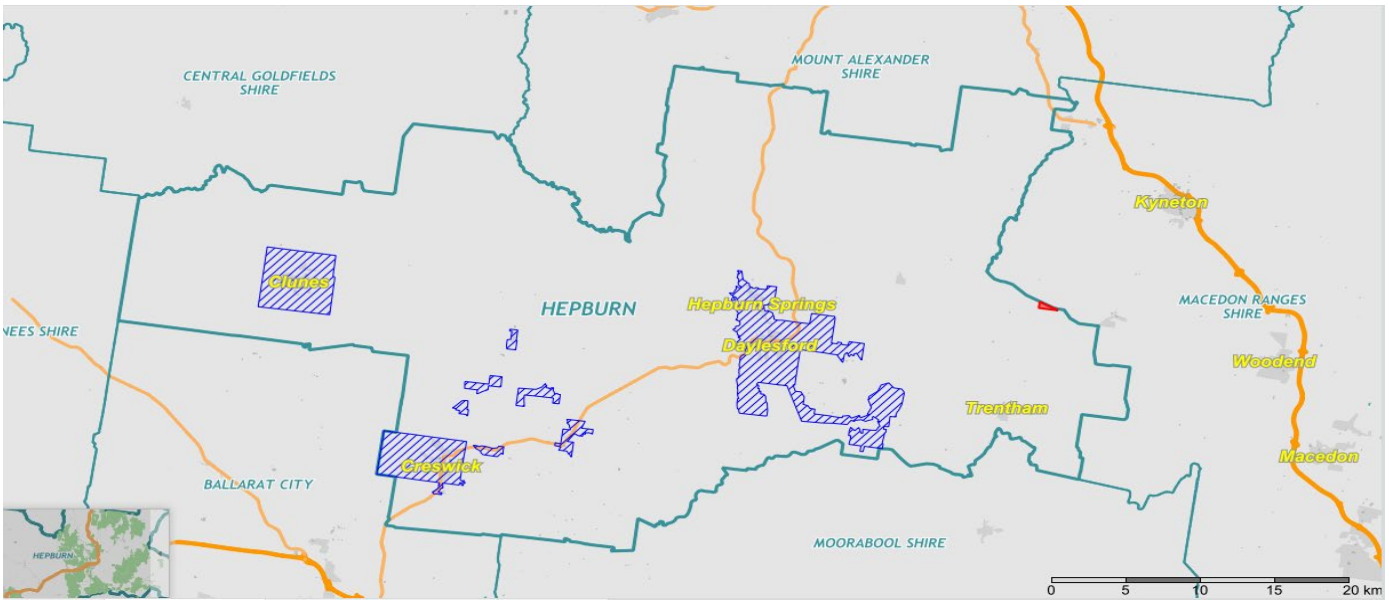
Coliban Water Catchment Boundaries



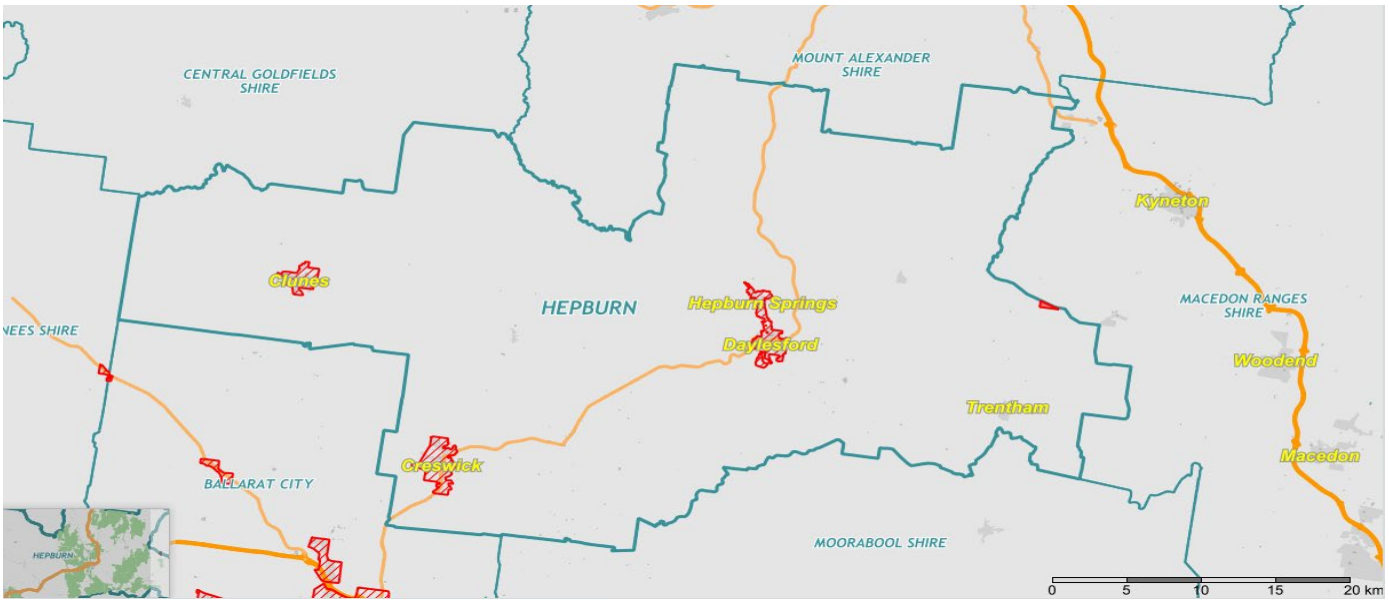
Central Highlands Water Sewer Mains



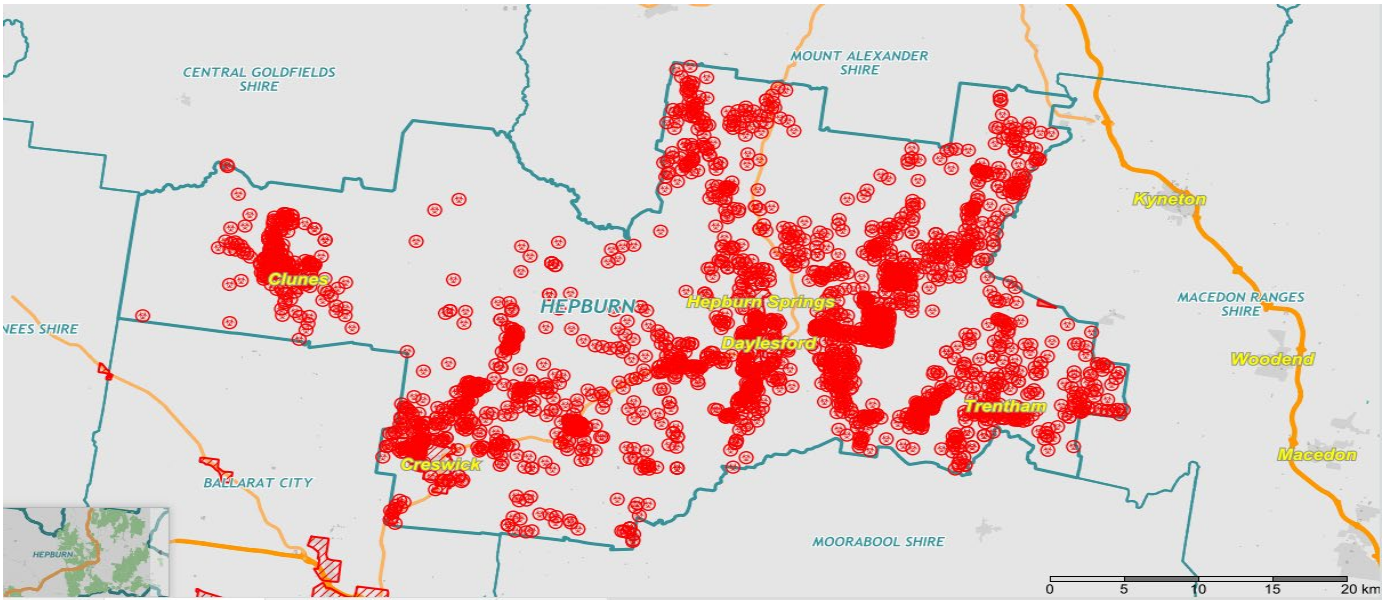
Central Highlands Water, Water District



Central Highlands Water Sewer District



OWMS Certificate to Use



Special Water Supply Catchment Areas